8-30-07 DAC/JFW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	**Huggins, George M.**	)	U.S. Appl. No. **10/781,483**
For:	**Pickup Tailgate Loading Ramp**	)	Filed: **February 17, 2004**
		)	Customer No: **54102**
		)	Examiner: **Woods, D.**

Mail Stop Petitions
Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PETITION TO ACCORD FILING DATE

CERTIFICATION UNDER 37 CFR 1.10

I hereby certify that this PETITION TO ACCORD FILING DATE and the documents referred to as enclosed therein are being deposited with the United States Postal Service on this **29th day of August, 2007** in an envelope as "Express Mail Post Office to Addressee" Mailing Label Number **EL-924-880-652-US** addressed to: Mail Stop Petitions, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

08/30/2007 HLE333 00000044 10781483
01 FC:1462 400.00 OP

James T. Robinson
Name of Person Mailing Paper

James T. Robinson
Signature of Person Mailing Paper

1. Original Submission

The papers for this CIP application under 37 CFR 1.53(b) and 37 CFR 1.78(a) were submitted on February 17, 2004.

2. Petition

Applicant hereby petitions for the filing date of the original papers submitted on February 17, 2004 to be accorded to the documents whose receipt has been acknowledged but which are missing from the USPTO file.

3. Proof of filing documents enclosed

- Copy of date-stamped receipt verification post card listing CIP documents received in USPTO February 17, 2004.
- Copy of receipt verification post card showing PETITION FOR REVIVAL with enclosures was received August 10, 2005.

4. Other Documents Enclosed

- Check Number 3434 in the amount of $400.00 (for this filing).
- Receipt verification post card (for this filing).
- Copy of as-filed CIP filing documents (filed February 17, 2004).
- Copy of as-filed PETITION FOR REVIVAL with enclosures (filed August 10, 2005).

5. Fee Payment Being Made At This Time

Enclosed is the PETITION FEE under 37 CFR 1.17(f) in the amount of $400.00.

Total fees enclosed: $400.00

6. Method of Payment of Fees

Check No. 3434 in the amount of **$400.00.**

Please refund any overpayment to applicant's attorney.

7. Request for Waiver of Fee under 37 CFR 1.17(f)

Due to the circumstances in this case, as set forth below, applicant respectively waiver of the petition fee in the interests of justice.

8. Remarks

In applicant's PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED UNINTENTIONALLY UNDER 37 CFR 1.137(B), applicant's attorney enclosed a RESPONSE AND AMENDMENT to the OFFICE ACTION mailed October 20, 2004, pointing out that the examiner apparently (and, possibly, erroneously) examined the claims in the original application rather than the single claim in the CIP application.

USPTO's Acknowledgment of Receipt of CIP Filing Documents. As shown in the enclosed copy of the date-stamped receipt verification post card dated February 17, 2004, the USPTO acknowledged receipt of the following:

- Continuation-in-part application filing (6 pages).
- PRELIMINARY AMENDMENT (2 pages).
- Substitute specification (12 pages).
- Claims (2 pages).
- Abstract (1 page).
- Formal drawings (10 pages).
- COMBINED DECLARATION AND POWER OF ATTORNEY (3 pages).
- PETITION TO MAKE SPECIAL BECAUSE OF APPLICANT'S AGE (2 pages).
- Check No. 2219 in the amount of $385.00.
- Documents filed in the parent application.
- Receipt verification post card.

USPTO's Acknowledgment of Receipt of CIP Filing Documents Enclosed With PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED UNINTENTIONALLY UNDER 37 CFR 1.137(B). As shown in the enclosed copy of the date-stamped receipt verification post card dated August 10, 2005, the USPTO acknowledged receipt of the following:

- PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED UNINTENTIONALLY UNDER 37 CFR 1.137(B) (3 pages). (NOTE: This should have been titled TRANSMITTAL OF PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED UNINTENTIONALLY UNDER 37 CFR 1.137(B).
- PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED UNINTENTIONALLY UNDER 37 CFR 1.137(B) (4 pages).
- Substitute Specification, Claims, and Abstract with highlights (15 pages).
- Substitute Specification, Claims, and Abstract without highlights (15 pages).
- Papers filed February 17, 2004 (60 pages).
- Formal drawings (10 pages).
- INFORMATION DISCLOSURE STATEMENT with attachments.
- Check No. 2873 in the amount of $750.00.

- Receipt verification post card.

As demonstrated above, both in the original filing (filing date February 17, 2004) and in the PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED UNINTENTIONALLY UNDER 37 CFR 1.137(B) (filing date August 10, 2005), the USPTO received the necessary documents for proper examination of applicant's CIP application.

USPTO Action Following Granting of PETITION TO REVIVE. In early January of 2006, applicant's attorney received a telephone call from Examiner Derek Woods. Examiner Woods noted that he was unable to examine the CIP application because the necessary documents were not present in his file. Examiner Woods advised applicant's attorney that applicant would need to petition the Commissioner for a filing date of February 17, 2004 for the documents missing from the file.

Request for Filing Date. Based on the facts shown herein, applicant respectfully requests the granting of a filing date of February 17, 2004 with respect to the following documents delivered to the USPTO on or about February 18, 2004 and again on August 10, 2005 as follows:

- Continuation-in-part application filing (6 pages).
- PRELIMINARY AMENDMENT (2 pages).
- Substitute specification (12 pages).
- Claims (2 pages).
- Abstract (1 page).
- Formal drawings (10 pages).
- COMBINED DECLARATION AND POWER OF ATTORNEY (3 pages).
- PETITION TO MAKE SPECIAL BECAUSE OF APPLICANT'S AGE (2 pages).
- Check No. 2219 in the amount of $385.00.
- Documents filed in the parent application.

Request for Examination. The claim of applicant's CIP application has not been examined to date. Therefore, applicant further requests an examination *ab initio* of the claim contained in applicant's CIP application filed February 17, 2004.

Request for Waiver of Petition Fee. Applicant further requests waiver of the fee under 37 CFR 1.17(f) associated with applicant's current PETITION.

Request for Further Relief. In light of the facts in the present case and the burden imposed on applicant by the USPTO's failure to insert properly filed documents in the USPTO file, applicant further requests a refund of both the original filing fee ($385.00) and the $750.00 fee which accompanied applicant's PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED UNINTENTIONALLY UNDER 37 CFR 1.137(B).

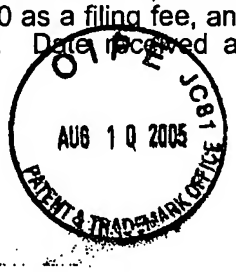
Respectfully submitted,

Dated: August 29, 2007

James T. Robinson, Reg. No. 33,548
EXCLUSIVITY-LAW, INC.
222 East Main Street
Norman, OK 73069-1303
Telephone Number 405.292.1911
Facsimile Number 405.321.1104
Email james.robinson@askeli.info

ATTORNEY FOR APPLICANT

A **PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED UNINTENTIONALLY** filing (3 pages) for a **Pickup Tailgate Loading Ramp** has been received by the USPTO. The sole inventor is **George M. Huggins**, D/N HUG107, and the documents filed include a PETITION FOR REVIVAL OF PATENT ABANDONED UNINTENTIONALLY (4 pages), a substitute Specification, Claims, and Abstract with highlights (15 pages), a substitute Specification, Claims, and Abstract without highlights (15 pages), Papers Filed February 17, 2004 (60 pages), Formal drawings (10 pages), INFORMATION DISCLOSURE STATEMENT with attachments, Check No. 2873 in the amount of $750.00 as a filing fee, and this receipt verification post card. Date received and is stamped hereon.



A continuation-in-part application filing (6 pages) for a **Pickup Tailgate Loading Ramp** has been received by the USPTO. The sole inventor is **George M. Huggins**, D/N HUG107, and the documents filed include a PRELIMINARY AMENDMENT (2 pages), a substitute Specification (12 pages), Claims (2 pages), Abstract (1 page), Formal drawings (10 pages), a COMBINED DECLARATION AND POWER OF ATTORNEY (3 pages), a PETITION TO MAKE SPECIAL BECAUSE OF APPLICANT'S AGE (2 pages), Check No. 2219 in the amount of $385.00 as a filing fee, documents filed in the parent application, and this receipt verification post card. Date received and Serial Number assigned to the application are those stamped hereon.

22141 U.S. PTO
10/781483

021704

A continuation-in-part application (6 pages) for a

THIS PACKET FILED IN USPTO FEBRUARY 17, 2004

A continuation-in-part application filing (6 pages) for a **Pickup Tailgate Loading Ramp** has been received by the USPTO. The sole inventor is **George M. Huggins**, D/N HUG107, and the documents filed include a PRELIMINARY AMENDMENT (2 pages), a substitute Specification (12 pages), Claims (2 pages), Abstract (1 page), Formal drawings (10 pages), a COMBINED DECLARATION AND POWER OF ATTORNEY (3 pages), a PETITION TO MAKE SPECIAL BECAUSE OF APPLICANT'S AGE (2 pages), Check No. 2219 in the amount of $385.00 as a filing fee, documents filed in the parent application, and this receipt verification post card. Date received and Serial Number assigned to the application are those stamped hereon.

22141 U.S. PTO
10/781483

021704

A continuation-in-part application (6 pages) for a

A continuation-In-part application filing (6 pages) for a **Pickup Tailgate Loading Ramp** has been received by the USPTO. The sole inventor is **George M. Huggins**, D/N HUG107, and the documents filed include a PRELIMINARY AMENDMENT (2 pages), a substitute Specification (12 pages), Claims (2 pages), Abstract (1 page), Formal drawings (10 pages), a COMBINED DECLARATION AND POWER OF ATTORNEY (3 pages), a PETITION TO MAKE SPECIAL BECAUSE OF APPLICANT'S AGE (2 pages), Check No. 2219 in the amount of $385.00 as a filing fee, documents filed in the parent application, and this receipt verification post card. Date received and Serial Number assigned to the application are those stamped hereon.

A continuation-In-part application filing (6 pages) for a

EXCLUSIVITY-LAW, INC.
222 EAST MAIN
NORMAN, OK 73069-1303
(405) 292-1911

FIRST FIDELITY BANK, N.A.
NORMAN, OK 73069
39-269/1030

2219

2/17/2004

PAY TO THE ORDER OF Commissioner of Patents & Trademarks $ **385.00

Three Hundred Eighty-Five and 00/100********** DOLLARS

Commissioner of Patents & Trademarks

James T. Robinson

AUTHORIZED SIGNATURE

MEMO HUG107

[redacted]

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Docket No. **HUG107**
Anticipated Classification of this Application:
Class: **XXX** Subclass: **XXXXXX**
S/N:
Prior Application: **09/750,498**
Examiner: **Fox, C.**
Art Unit: **3652**

Mail Stop PATENT APPLICATION
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

CONTINUATION-IN-PART APPLICATION
FILING UNDER 37 CFR 1.53(b) and 1.78(a)

CERTIFICATION UNDER 37 CFR 1.10

I hereby certify that this CONTINUATION-IN-PART APPLICATION FILING and the documents referred to as enclosed therein are being deposited with the United States Postal Service on this 17th day of February, 2004, in an envelope as "Express Mail Post Office to Addressee" Mailing Label Number EL-886-358-148-US addressed to: Mail Stop PATENT APPLICATION, Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450Washington, D.C. 20231.

James T. Robinson
Name of Person Mailing Paper

Signature of Person Mailing Paper

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1. Type of Application

This is a request for filing a continuation-in-part application, under 37 CFR 1.53(B) and 1.78(a), of a pending prior application S/N **09/750,498**, filed on December 29, 2000, for a:

PICKUP TAILGATE LOADING RAMP

I hereby verify that the attached papers are a true copy of what is shown in my records to be a part of the above-identified prior application.

The copies of the papers of the prior application which are attached are as follows:

- New Application Transmittal.
- United States Patent Application for **Pickup Tailgate Loading Ramp**, including 14 pages (8 pages specification, 2 pages claims, and 1 page Abstract) plus 3 sheets of drawings.
- Patent Application Fee Determination Record
- COMBINED DECLARATION AND POWER OF ATTORNEY.

PARTICULARS OF PRIOR APPLICATION

A. Application Serial No.: **09/750,498**

Date filed: **December 29, 2000**

B. Title as originally filed: **Pickup Tailgate Loading Ramp**

Title as last amended: **Pickup Tailgate Loading Ramp**

C. Name of applicants as originally filed and as last amended:

George M. Huggins

The current address of the inventor is as follows:

1678 Country Street 2982
Blanchard, OK 73010

A PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED UNINTENTIONALLY UNDER 37 CFR 1.137(B) was filed this date by separate mail, and copy is attached herewith.

2. **Inventorship Statement**

(a) This application discloses and claims new subject matter not disclosed in the prior application whose particulars are set out above and **the inventor in this application is the same.**

(b) The **inventorship** for all the claims in this application **is the same.**

3. **Declaration or Oath**

A COMBINED DECLARATION AND POWER OF ATTORNEY is enclosed.

4. **Identification of Claims for Prosecution**

The current application includes a new specification and a single claim. The fees to be charged are for new independent claim 1.

5. **Fee Calculation (37 CFR 1.16)**

Claims For Fee Calculation

Number filed 37 CFR 1.16(a)		Number		Extra Rate	Basic Fee
					$ 385
Total claims	**1 - 3 =**	**0**	**x**	**$43**	**– 0 –**
Independent Claims	**1 - 20 =**	**0**	**x**	**$9**	**– 0 –**
Multiple Independent Claims		**0**	**x**	**$145**	**– 0 –**
	FILING FEE TOTAL				**$ 385**

6. **Petition for Suspension of Prosecution for Time Necessary to File an Amendment**

None filed.

7. **Small Entity Statement**

Small entity status is claimed.

Reduced Filing Fee	**$ 385**

8. **Fee Payment Being Made At This Time**

Filing fee attached in the amount of:	**$ 385**
TOTAL FEE ENCLOSED	**$ 385**

9. **Method of Payment of Fees**

Check number **2219** in the amount of **$385.00** is enclosed.

10. **Authorization to Charge Additional Fees**

Not applicable.

11. **Instructions as to Overpayment**

Refund any overpayment to:

James T. Robinson
222 East Main Street
Norman, OK 73069-1303

12. **Priority**

No priority based on foreign filing is being claimed.

13. **Relate Back – 35 U.S.C. 120**

The specification, as amended by PRELIMINARY AMENDMENT filed herewith, includes, before the first line, the sentence:

"This is a continuation-in-part of co-pending application Serial No. 09/750,498 filed on December 29, 2000."

14. Assignment

None.

15. Power Of Attorney

The power of attorney in the prior application is to:

James T. Robinson
Registration No. 33,548

Send correspondence to:

James T. Robinson
222 East Main Street
Norman, OK 73069-1303

Direct telephone calls to:

James T. Robinson
(405) 292-1911

A COMBINED DECLARATION AND POWER OF ATTORNEY is enclosed.

16. Maintenance of Co-pendency of Prior Application

The parent application was unintentionally abandoned. A PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED UNINTENTIONALLY UNDER 37 CFR 1.137(B) is being filed simultaneously herewith.

17. Conditional Petitions for Extension of Time in Prior Applications

None.

18. Abandonment of Prior Application

Do **NOT** abandon the parent application.

19. Information Disclosure Statement

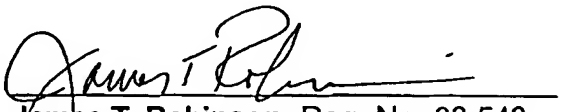
INFORMATION DISCLOSURE STATEMENT is NOT submitted herewith.

20. Other Papers Enclosed

- PRELIMINARY AMENDMENT (**2** pages) is enclosed.
- Substitute specification (**12** pages) is enclosed.
- A new page of Claims (**2** pages containing **1** independent claim) is enclosed.
- A new Abstract (**1** page) is enclosed.
- **10** sheets of ***formal*** drawings are enclosed.
- A copy of the PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED UNINTENTIONALLY UNDER 37 CFR 1.137(B), filed this date, is attached.
- A receipt verification post card is enclosed.
- A PETITION TO MAKE SPECIAL BECAUSE OF APPLICANT'S AGE is enclosed.

21. ATTORNEY'S DECLARATION

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application of any parent issuing thereon.



James T. Robinson, Reg. No. 33,548
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ATTORNEY FOR APPLICANT

Pickup Tailgate Loading Ramp

George M. Huggins, Inventor

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] **This is a continuation-in-part of co-pending application Serial No. 09/750,498 filed on December 29, 2000.** This invention relates to a pickup tailgate loading ramp, and more particularly, but not by way of limitation, to a loading ramp for use in conjunction with a pickup truck, wherein the tailgate ramp of the present invention replaces the normal pickup truck tailgate. The tailgate ramp includes hinge assemblies and latching assemblies which cooperate with existing tailgate hardware to secure the tailgate ramp to the pickup truck. The terms pickup tailgate loading ramp and tailgate ramp, as used herein, refer to applicant's invention.

2. Discussion

[0002] Pickup trucks are well known, and their popularity continues to grow. They are used to carry a variety of cargo, including outdoor power equipment such as lawnmowers, garden tractors, all terrain vehicles, and golf carts. It is difficult, if not impossible, to load a riding lawnmower or an all terrain vehicle into the bed of a pickup truck when the truck is equipped with original equipment tailgate (sometimes also referred to as an endgate).

[0003] While ramps that also serve as tailgates are known for use on pickup trucks, the currently existing products have various disadvantages. Different pickup truck manufacturers use different latch mechanisms and different hinge assemblies for tailgates of different widths. Tailgate ramps were largely custom built for each model of each pickup truck in order to properly locate the locking mechanism at a proper height.

[0004] Moreover, most convertible endgates were relatively heavy, difficult to attach or remove, and difficult to deploy in a load position. Many of the latch mechanisms for tailgate ramps were difficult to operate.

[0005] Although pickup tailgate ramps are known in the art, until now no tailgate ramp has been suited both for supporting substantial loads such as all terrain vehicles, garden tractors, golf carts, and other recreational devices and also for easy installation and removal.

SUMMARY OF THE INVENTION

[0006] Applicant's invention provides a combination tailgate and loading ramp for pickup trucks. A rectangular tailgate section is rigidly attached to an upper ramp section, hose lower end is pivotally attached to a linkage member. A support member and a lower ramp section are also attached to the linkage member to form a strong but lightweight ramp from the road surface to the bed of the pickup truck.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] Figure 1 shows the pickup tailgate loading ramp according to the present wherein the tailgate ramp is deployed in a vertical (i.e., stored) position.

[0008] Figure 2 shows the pickup tailgate loading ramp shown in Figure 1 wherein the tailgate ramp is deployed in a load position.

[0009] Figure 3 is an enlarged detailed view of the pickup tailgate loading ramp shown in Figures 1 and 2.

[0010] Figure 4 is a view of the tailgate ramp of Figures 1-3 wherein the left folding ramp assembly and the right folding ramp assembly are exploded upwardly away from the tailgate assembly.

[0011] Figure 5 is a top plan view of the tailgate ramp of Figures 1-3.

[0012] Figure 6 is a rear plan view of the tailgate ramp of Figures 1-3 from behind the pickup truck.

[0013] Figure 7 is a bottom plan view of the tailgate ramp of Figures 1-3.

[0014] Figure 8 is a left plan view of the left folding ramp assembly.

[0015] Figure 9 is a right plan view of the right folding ramp assembly.

[0016] Figure 10 is a front plan view of the tailgate ramp of Figures 1-3.

[0017] Figure 11 is an exploded view of the left folding ramp assembly and the right folding ramp assembly.

[0018] Figure 12 is a closeup view of the right latch assembly of the tailgate ramp shown in Figures 1-3.

[0019] Figure 13 is an exploded view of the right latch assembly shown in Figure 12.

[0020] Figure 14 is an exploded view of the tailgate assembly, the left latch assembly, the right latch assembly, the left hinge assembly, and the right hinge assembly, all as shown in Figures 1-3, together with alternate latch assemblies and alternate hinge assemblies according to the present invention.

[0021] Figure 15 shows still another latch assembly according to the present invention.

[0022] Figure 16 is an enlarged view of the latch assembly of Figure 15 with a portion of the tailgate assembly cut away.

[0023] Figure 17 illustrates the movement of the tailgate ramp of Figures 1-3 from the vertical (i.e., stored) position shown in Figure 1 to the load position shown in Figure 2.

DETAILED DESCRIPTION OF THE INVENTION

[0024] In the following description of the invention, like numerals and characters designate like elements throughout the figures of the drawings.

[0025] Referring now to the drawings generally and to Figure 1 in particular, a pickup tailgate loading ramp 50 in accordance with the present invention is mounted on the pickup truck T resting on a road surface S using existing tailgate hardware (not shown). The tailgate ramp 50 includes a tailgate assembly 52, a left folding ramp assembly 54, a right folding ramp assembly 56, a left latch assembly 58, a right latch assembly 60, a left hinge assembly 62, and a right hinge assembly 64. The tailgate ramp 50 of Figure 1 is shown in the vertical (i.e., storage) position.

[0026] Referring now to Figure 2, the tailgate loading ramp 50 is deployed in a load position so that the left folding ramp assembly 54 and the right folding ramp assembly 56 cooperate with the tailgate assembly 52 to create a continuous path from the surface S to the bed B of the pickup truck T. U-shaped support members 70 are attached to the left folding ramp assembly 54 and the right folding ramp assembly 56 (*see* Figure 3 and Figure 17).

[0027] Referring now to Figure 3, the tailgate loading ramp 50 is shown detached from the pickup truck T. The tailgate assembly 52 includes a horizontal rail 80 and a parallel horizontal rail 82 interconnected by left end rail 84 and right end rail 86, having lower end portions 88, 90, respectively. The left latch assembly 58 is attached to the left end rail 84 and the right latch assembly 60 is attached to the right end rail 86. The left latch assembly 58 and the right latch assembly 60 engage existing tailgate latching pins P (*see* Figure 2, only one shown) to secure the tailgate loading ramp 50 in the vertical position.

[0028] Still referring to Figure 3, the left hinge assembly 62 is attached to the horizontal rail 80 adjacent the lower end portion 88 of the left end rail 84. The right hinge assembly 64 is attached to the horizontal rail 80 adjacent the lower end portion 90 of the right end rail 86. The left and right hinge assemblies, 62, 64, pivotally engage hinge pins P (now shown), standard tailgate attachment hardware located adjacent the bed B of the pickup truck T.

[0029] Still referring to Figure 3, the left folding ramp assembly 54 includes an upper ramp section 92 attached at one end to a left end portion 94 of the parallel horizontal rail 82 (*see* Figures 4, 6, 10, and 14). The right folding ramp assembly 56 includes an upper

ramp section 96 attached at one end to a right end portion 98 of the parallel horizontal rail 82 (*see* Figures 4, 6, 10, and 14). As used with respect to the folding ramp assemblies 54, 56, the term upper is used to indicate the structure so described is higher in elevation (and nearer the bed B of the pickup truck T) when the tailgate loading ramp 50 is deployed in the load position. Similarly, the term lower is used to indicate the structure so described is lower in elevation (and nearer the surface S on which the pickup truck T rests) when the tailgate loading ramp 50 is deployed in the load position.

[0030] Still referring to Figure 3, the other end of each of the upper ramp sections 92, 96 is pivotally attached to a pair of linkages 100. Each linkage 100 has an upper portion 102, an intermediate portion 104, and a lower portion 106. Each of the upper ramp sections 92, 96 has an upper portion 108 and a lower portion 110. The ends of the upper ramp sections 92, 96 adjacent the upper portions 108 of the upper ramp sections 92, 96 are rigidly connected to the parallel horizontal rail 82. The other ends of the upper ramp sections 92, 96, adjacent the lower portions 110 of the upper ramp sections 92, 96, are pivotally attached to the linkages 100 adjacent the upper portion of linkage 102.

[0031] Still referring to Figure 3, the ends of each of the U-shaped support members 70 are pivotally attached to the linkages 100 in the intermediate portion 104 of the linkages 100 by fasteners 118.

[0032] Still referring to Figure 3, each folding ramp section 54, 56 includes a lower ramp section 112 having an upper end 114 and a lower end 116. The upper end 114 of each lower ramp section 112 is attached to two linkages 100 adjacent the lower portions

of linkage 106 of the linkages 100. The lower end 116 of each lower ramp section 112 rests on the surface S when the tailgate ramp 50 is deployed in the load position.

[0033] Referring now to Figures 4-10, the left upper ramp section 92 and the right upper ramp section 96 are exploded upwardly from the parallel horizontal rail 82. Projections 120 extending from the upper end portions108 of the upper ramp sections 54, 56 are received through holes 122 in the parallel horizontal rail 82 and disposed within hollow frame members 124 of the tailgate assembly 52. When the projections 120 are disposed within the hollow frame members 124, horizontal bores 126 in the projections 120 mate with throughways 128 in the hollow frame members 124. Pins 130 secure the upper ramp sections 92, 96 to the tailgate assembly 52. Each fastener 130 extends through a throughway 128 and through the horizontal bore 126 in the projection 120.

[0034] Still referring to Figures 4-10, holders 132 secure lower ramp sections 112 to the upper ramp sections 92, 96 when the tailgate ramp 50 is in the vertical (i.e., stored) position (*see* Figures 8 and 9).

[0035] Still referring to Figures 4-10, the left hinge assembly 62 includes a hollow cylindrical member 134 which receives a left hinge pin attached to the left side of the pickup truck T adjacent the bed B. The right hinge assembly 64 includes a partially cutaway cylindrical member 136 which mates with a mating right hinge pin attached to the right side of the pickup truck T adjacent the bed B.

[0036] The hinge pin assemblies 62, 64 according to the present invention match the factory equipment on the pickup truck T. It will be understood by one skilled in the art that a variety of mating configurations are known in the art. Applicant's invention is adaptable

for use with any mating configuration which permits a tailgate to be easily removed and installed.

[0037] Referring now to Figures 8 and 9, an arrow A shows the direction of movement, in concert, of the left upper ramp portion 92 and the right upper ramp portion 96 as to raise the holder 132 which secures the

[0038] Referring now to Figure 11, the folding ramp assemblies of the present invention are shown in exploded view. Each linkage 100 has a bore 140 located adjacent the upper portion 102 of the linkage 100, a bore 142 located in the intermediate portion 104 of the linkage 100, and a bore 144 located adjacent the lower portion 106 of the linkage 100. The upper ramp section 92 is attached to two linkages 100 by means of fasteners 118 disposed through the bores 140 of two linkages 100 and through bores 150 located adjacent the upper portion 108 of the upper ramp section 92. Likewise the upper ramp section 96 is attached to two linkages 100 by fasteners 118 disposed through the bores 140 of the two linkages 100 and through bores 150 located adjacent the upper portion 108 of the upper ramp section 96.

[0039] Each of the U-shaped support members 70 is attached to two linkages 100 by fasteners 118 disposed through the bores 142 located in the intermediate portions 104 of the two linkages 100 and through bores 152 adjacent the ends of the U-shaped support members 70.

[0040] Each of the lower ramp sections 112 is attached to two linkages 100 by fasteners 118 disposed through the bores 144 located adjacent the lower portion of the

linkages 100 and through bores 154 adjacent the upper ends 114 of the lower ramp sections 112.

[0041] Referring now to Figures 12 and 13, the right latch assembly 60 according to the present invention is attached to the right end rail 86 of the tailgate assembly 52. A spring-biased latching arm 170 is attached to a latch support 172 attached to the right end rail 86 of the tailgate assembly 52 by latch support mounting security bolts 174. The spring-biased latching arm 170 rocks on a pivot bolt 176 which extends through a biasing spring 178 and through a bore 180 in the latching arm 170, and through a bore 182 in the latch support 172. One end 184 of the latching arm 170 includes a cutout 186 which engages the tailgate latching pin P provided as standard equipment on the pickup truck T (*see* Figure 2). The other end 188 of the latching arm 170 includes a bore 190 which mates with a bore 192 in a tab portion 194 of the latch support 172 when the tailgate ramp 50 according to the present invention is in the vertical (i.e., storage) position. The latch support 172 is mounted at a convenient location along arrow B on the right end rail 86 of the tailgate assembly 52.

[0042] Referring now to Figure 14, the left hinge assembly 62 consists of a hollow cylindrical member 134 disposed within a first tubular member 200 attached to the horizontal rail 80 of the tailgate assembly 52. The cylindrical member 134 has a transverse bore 202 which mates with a transverse bore 204 in the tubular member 200. A fastener 206 extends through the cylindrical member transverse bore 202 and the mating tubular member transverse bore 204 and thereby secures the hollow cylindrical member 134 within the tubular member 200.

[0043] Still referring to Figure 14, the right latch assembly 64 consists of a partially cutaway hollow cylindrical member 136 secured in a second tubular member 208 attached to the horizontal rail 80 distal from the tubular member 200.

[0044] Still referring to Figure 14, a hollow cylindrical member 234 having a length less than the length of the hollow cylindrical member 134 and a partially cutaway hollow cylindrical member 236 having a length less than the length of the partially cutaway hollow cylindrical member 136 permits the tailgate assembly 52 to be adapted for use in a pickup truck having a narrower tailgate width.

[0045] Ford, General Motors, and Daimler-Chrysler pickup trucks for model years 1999 through 2004 have similar tailgate latching mechanisms and similar hinge assemblies, but the position of the latching pin P and the width of the tailgate vary between the three manufacturers. It will be understood by one skilled in the art that the latch assembly 58, 60 and the hinge assembly 62, 64 of the present invention permit the adaptation of a single tailgate assembly 52 to any of the three manufacturers.

[0046] Still referring to Figure 14, another latch support 272 includes a tab 292 having a bore 294 wherein the tab 292 is located near the bottom of the latch support 272. The latch support 272 facilitates the adaptation of the tailgate ramp 50 to a changed location of the latch pin P without drilling additional holes in the end rail 86 of the tailgate assembly 52.

[0047] Still referring to Figure 14, another latch assembly 360 permits use of the tailgate assembly 52 of the present invention with Ford, General Motors, and Daimler-Chrysler pickup trucks for model years prior to 1999. A latch support 370 containing a

spring-loaded latch pin 372 is mounted on the rail 86 of the tailgate assembly 52. A spring 374 biases the latch pin 372 in a distended position to engage a standard latch pin receiver in the pickup truck. A thumb lever 376 permits temporary disengagement of the latch pin 372 from the latch pin receiver for deployment of the tailgate ramp 50 in the load position. A backstop 378 is secured to the latch support 370 by fasteners 380 to limit travel of the latch pin 372 in the biased direction.

[0048] Referring now to Figures 15 and 16, shown therein is another latch assembly 400 for use according to the present tailgate ramp invention in Ford, General Motors, and Daimler-Chrysler pickup trucks for model years prior to 1999. A spring-loaded pull plunger 402 is housed in a cylindrical barrel 404. A spring 406 biases the plunger 402 in an extended position so the plunger 402 is disposed within the standard-equipment pickup truck latch pin receiver. A finger loop 408 permits manual withdrawal of the plunger 402 from the latch pin receiver.

[0049] Referring now to Figure 17, a left plan view of the tailgate ramp according to the present invention shows the operation of applicant's invention. Movement of the lower ramp section 112 along arrow A permits disengagement of the holder 132 from the upper ramp section 92. As the lower ramp section 112 is pulled outwardly and downward, the U-shaped support member 50, the upper ramp section 92, and the lower ramp section 112 pivot at their points of attachment to the linkage 100 so that, when fully extended, the tailgate ramp 50 of the present invention provides a ramp from the road surface S to the bed B of the pickup truck T. The U-shaped support member 70 provides support for both

the upper ramp section 92 and the lower ramp section 112 by virtue of their common connection to different points of attachment on the linkage 100.

[0050] The foregoing descriptions of specific embodiments of the present invention have been presented for purposes of illustration and description. They are not intended to be exhaustive or to limit the invention to the precise forms disclosed, and obviously many modifications and variations are possible in light of the above teaching. The embodiments were chosen and described in order to best explain the principles of the invention and its practical application, to thereby enable others skilled in the art to best utilize the invention and various embodiments with various modifications as are suited to the particular use contemplated. It is intended that the scope of the invention be defined by the claims appended hereto and their equivalents.

CLAIMS

I claim:

1. A pickup tailgate loading ramp for replacement of a standard pickup tailgate attached to the pickup by standard-equipment tailgate hardware, wherein said pickup tailgate loading ramp is adjustable between a vertical position when said pickup tailgate loading ramp is not being used for loading and a load position for moving materials and equipment from the road surface into the bed of the pickup truck, wherein the standard-equipment pickup tailgate hardware includes two latch pins and two hinge pins, said pickup tailgate loading ramp comprising:

a generally rectangular tailgate assembly having a first horizontal rail, an opposed second horizontal rail, and first and second end rails;

first and second hinge assemblies, wherein said first and second hinge assemblies are attached to said first horizontal rail and hingedly connect said first horizontal rail to said hinge pins;

first and second latch assemblies, wherein said first latch assembly is attached to said first end rail and said second latch assembly is attached to said second end rail, so that, when said pickup tailgate loading ramp is in the vertical position said first and second latch assemblies engage the standard-equipment latch pins and secure said pickup tailgate loading ramp to the pickup truck;

at least one folding ramp assembly, said folding ramp assembly further comprising:

an upper ramp section having an upper end and a lower end, said upper end of said upper ramp section being rigidly attached to said opposed horizontal rail of said tailgate section ;

a lower ramp section having an upper end and a lower end;

a U-shaped support member; and

a linkage member, said linkage member being characterized as having an upper portion, an intermediate portion, and a lower portion, said upper ramp section being pivotally attached to said upper portion of said linkage member, said support member being attached to said intermediate portion of said linkage member, and said lower ramp section being pivotally attached to said lower portion of said linkage member;

so that, as said tailgate assembly is rotated on said first and second hinge assemblies, said upper ramp section and said lower ramp section are extended outwardly and down from the pickup truck until said lower end of said lower ramp section is in contact with the road surface and a ramp is formed for moving materials from the road surface to the bed of the pickup truck.

ABSTRACT

A tailgate and loading ramp for pickup trucks includes a rectangular tailgate section rigidly attached to an upper ramp section. The lower end of the upper ramp section is pivotally attached to a linkage member. A support member and a lower ramp section are also attached to the linkage member to form a strong but lightweight ramp from the road surface to the bed of the pickup truck.

FIG. 1

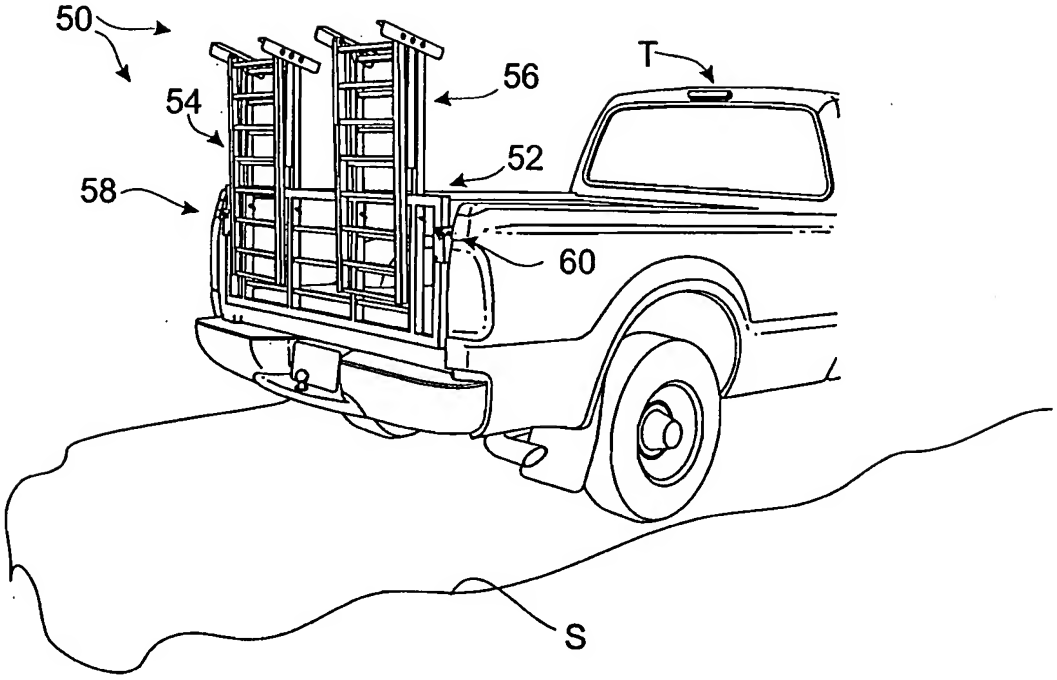

FIG. 2

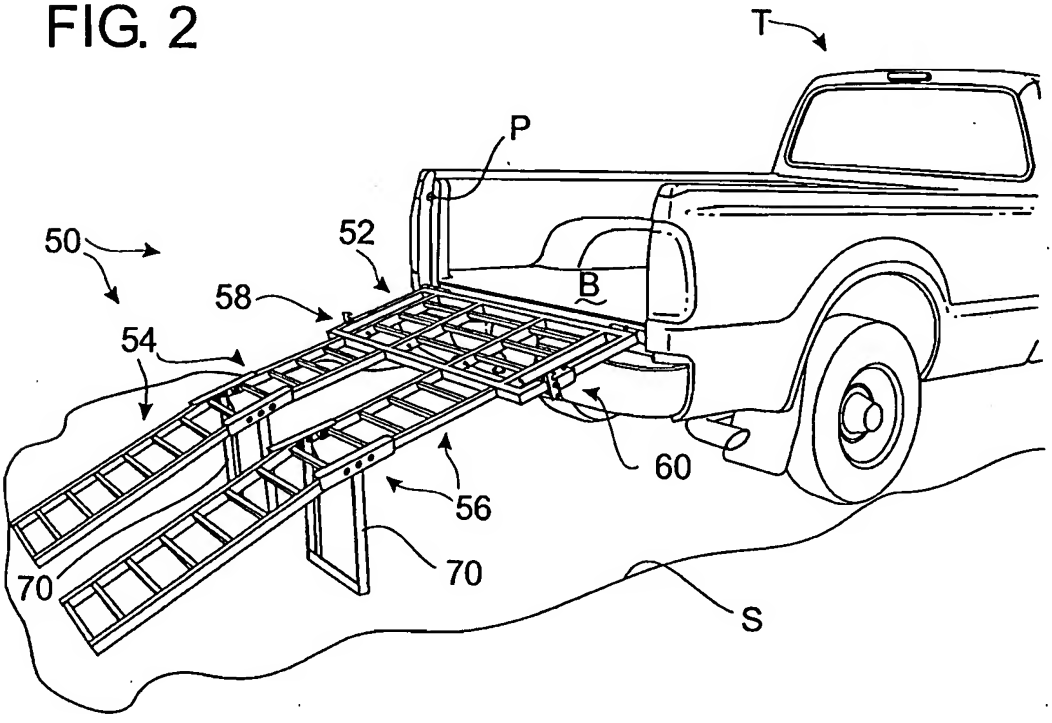

FIG. 3

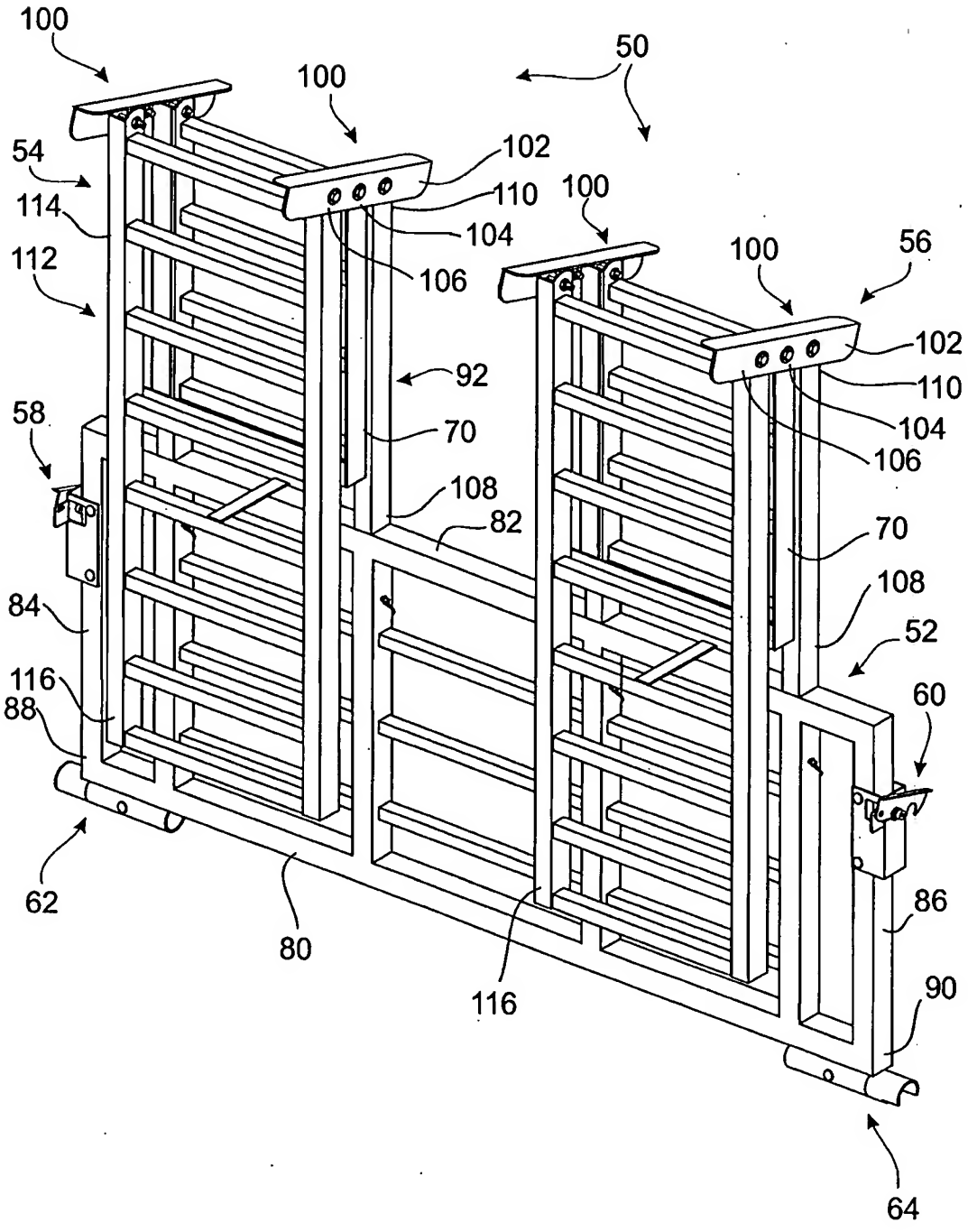
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FIG. 4

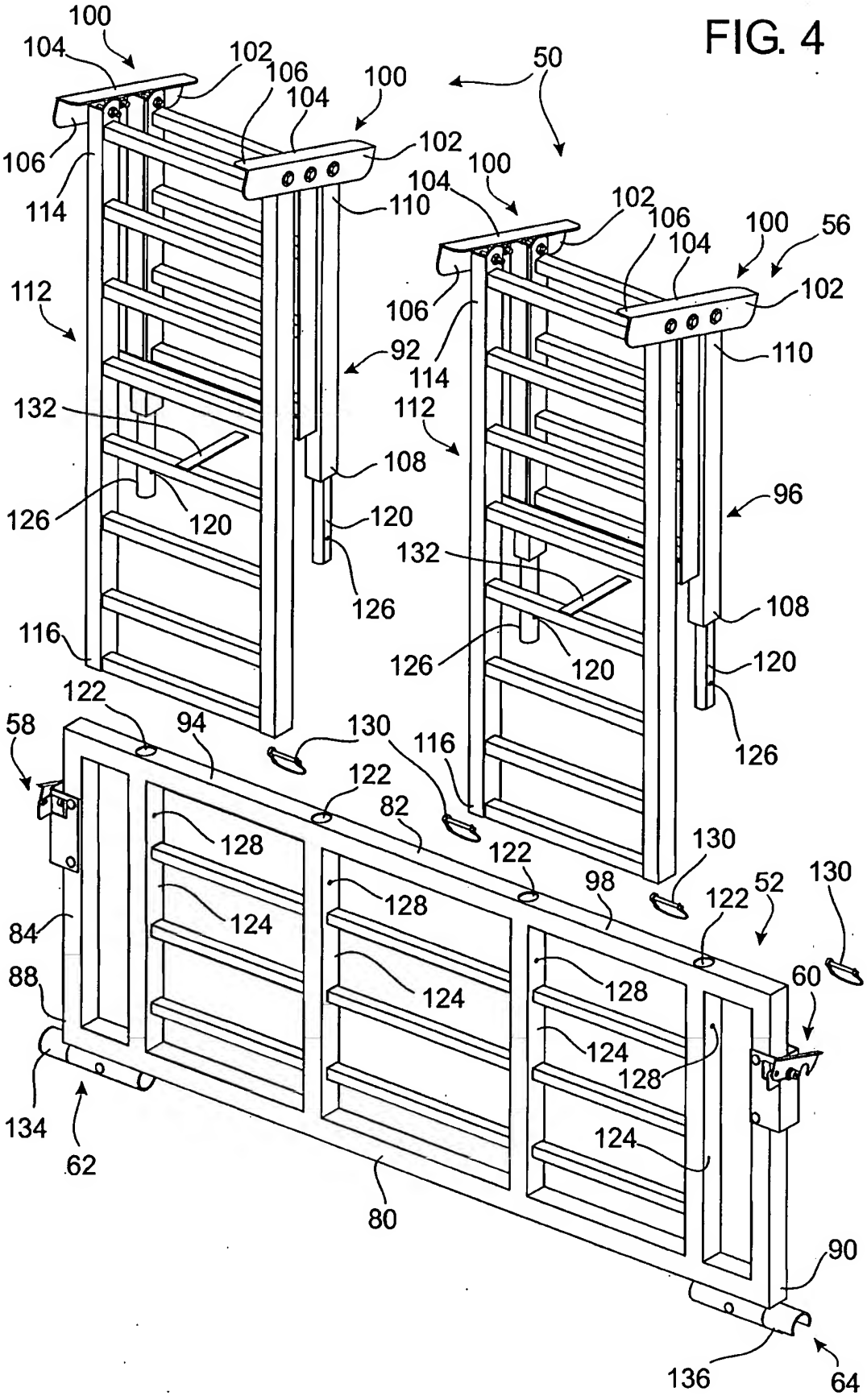
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FIG. 5

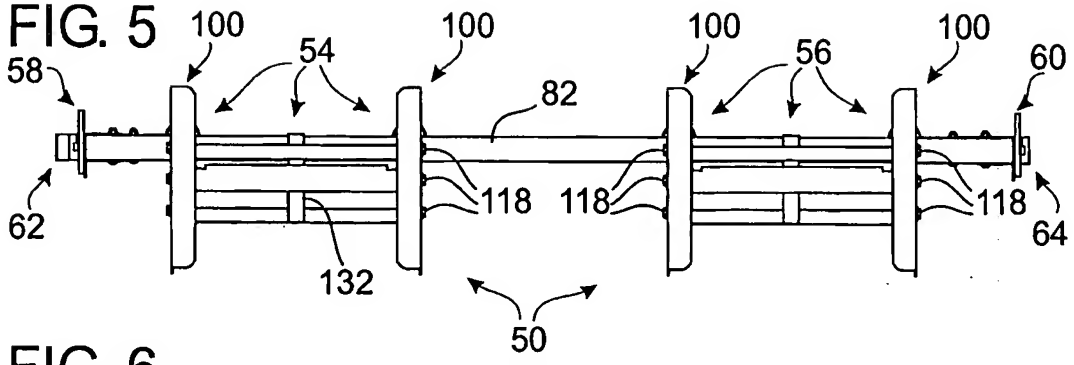


FIG. 6

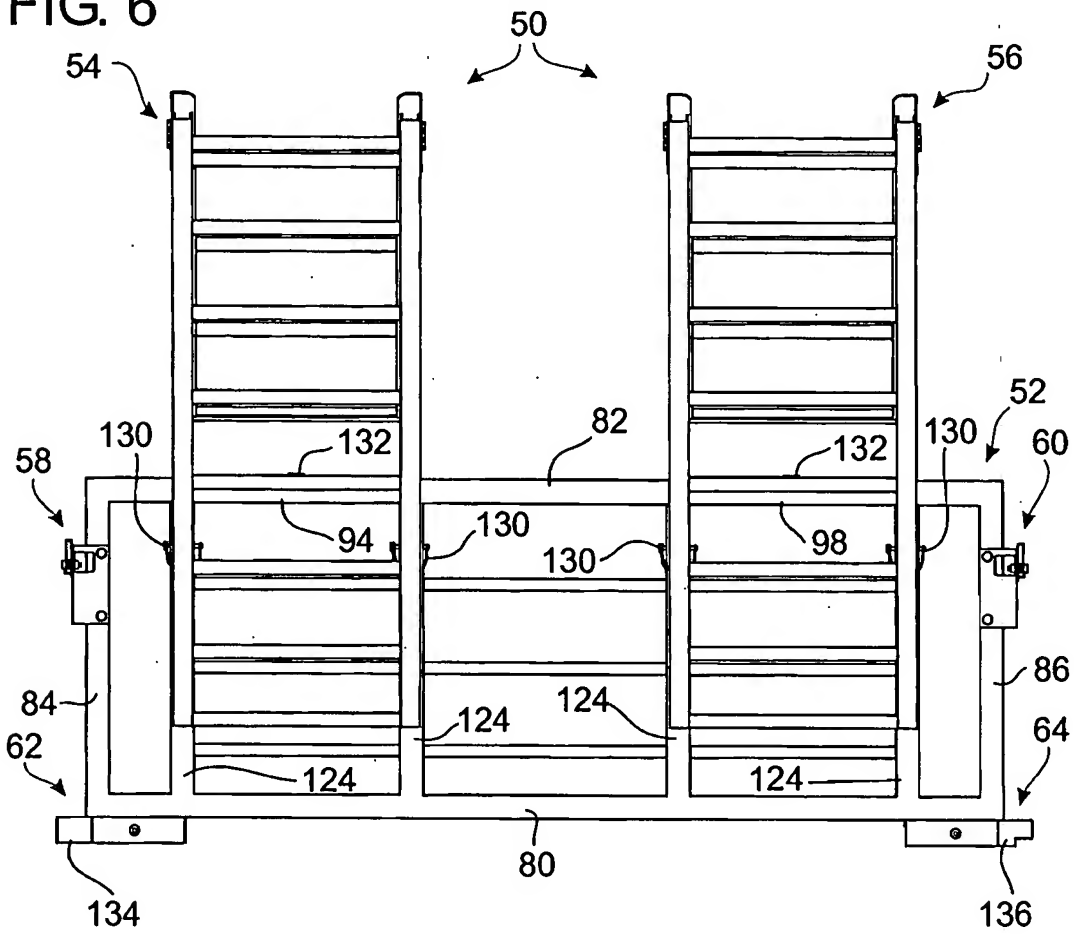


FIG. 7

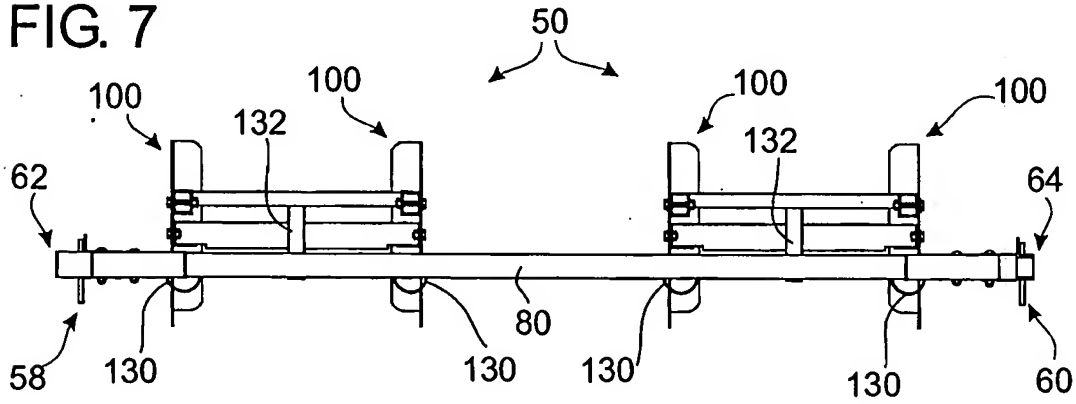


FIG. 8

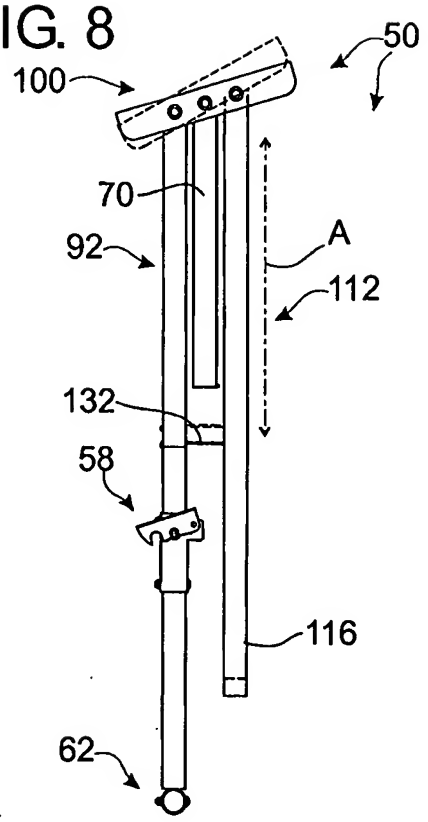


FIG. 9

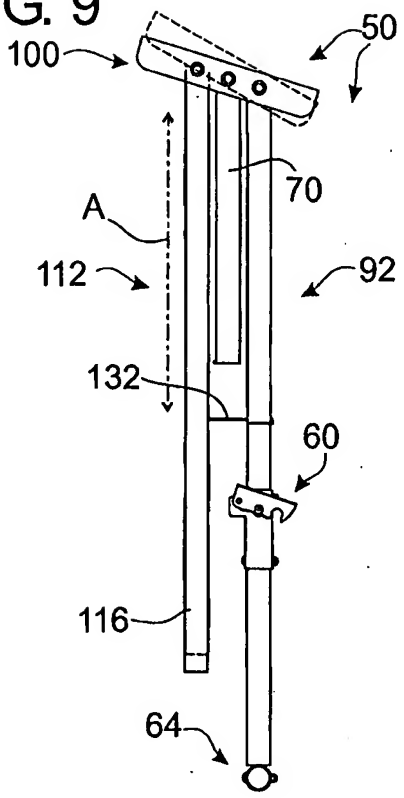
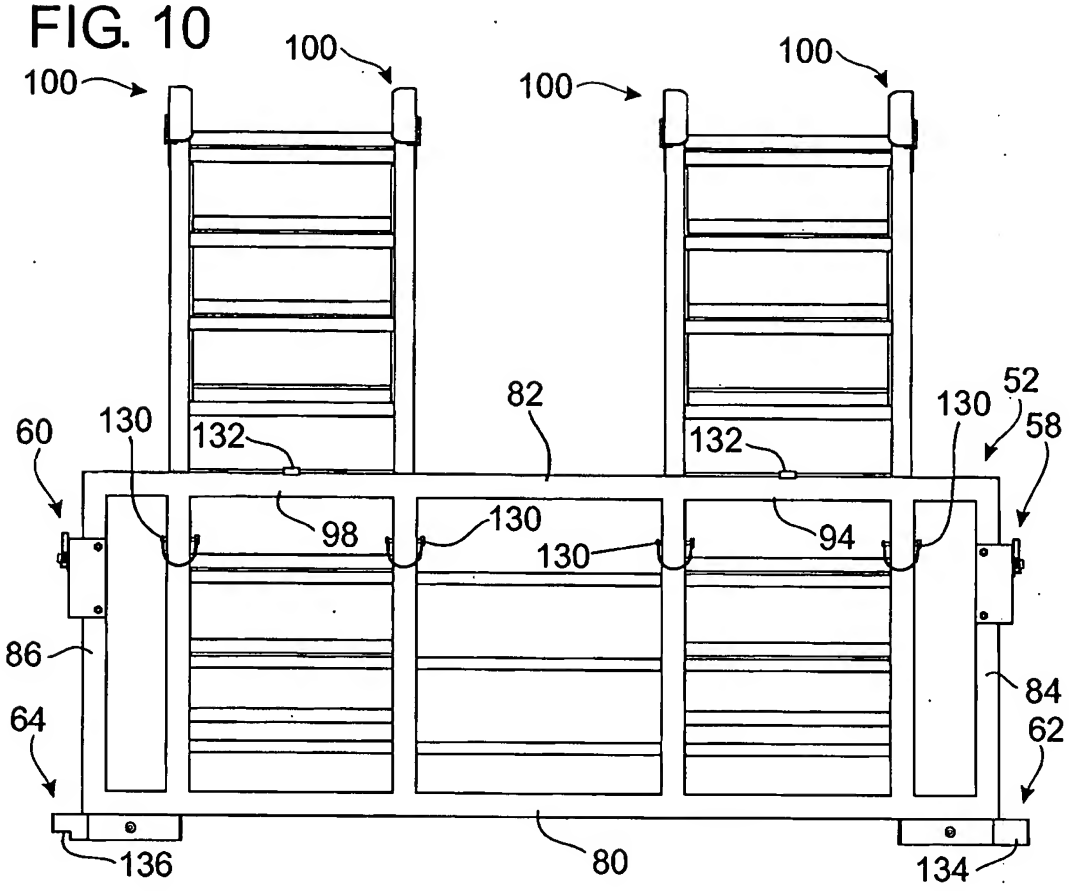


FIG. 10



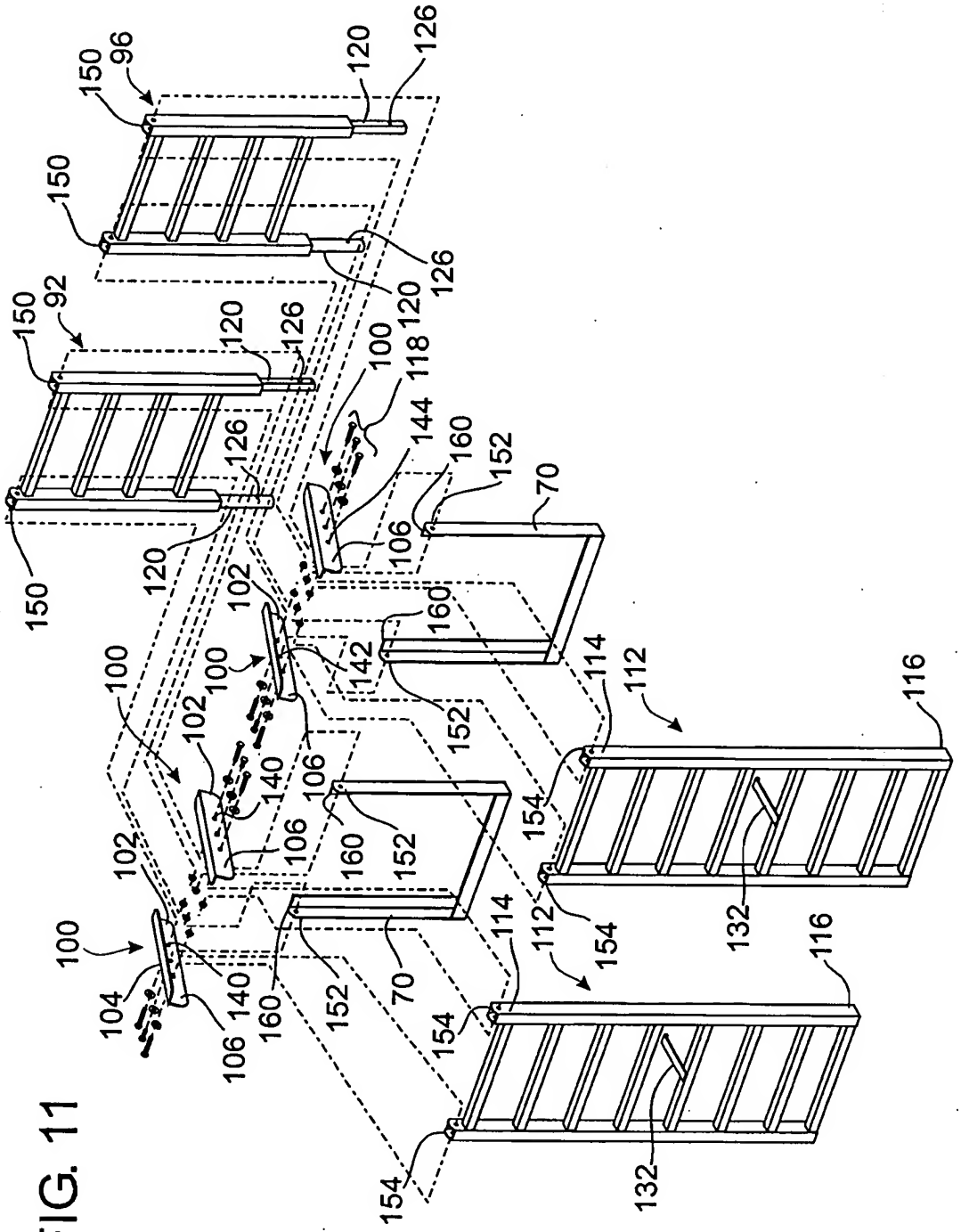

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FIG. 11

FIG. 12

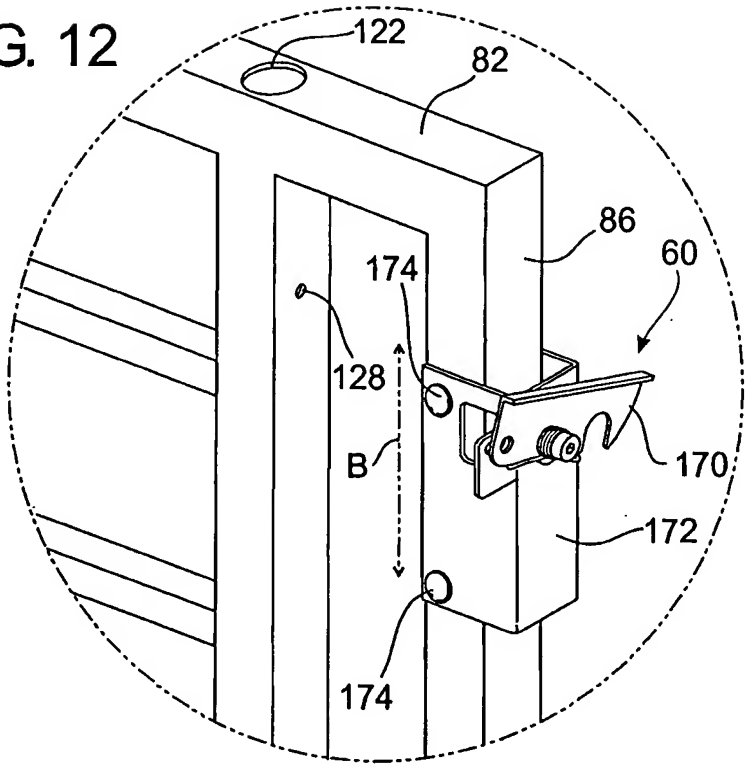
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FIG. 13

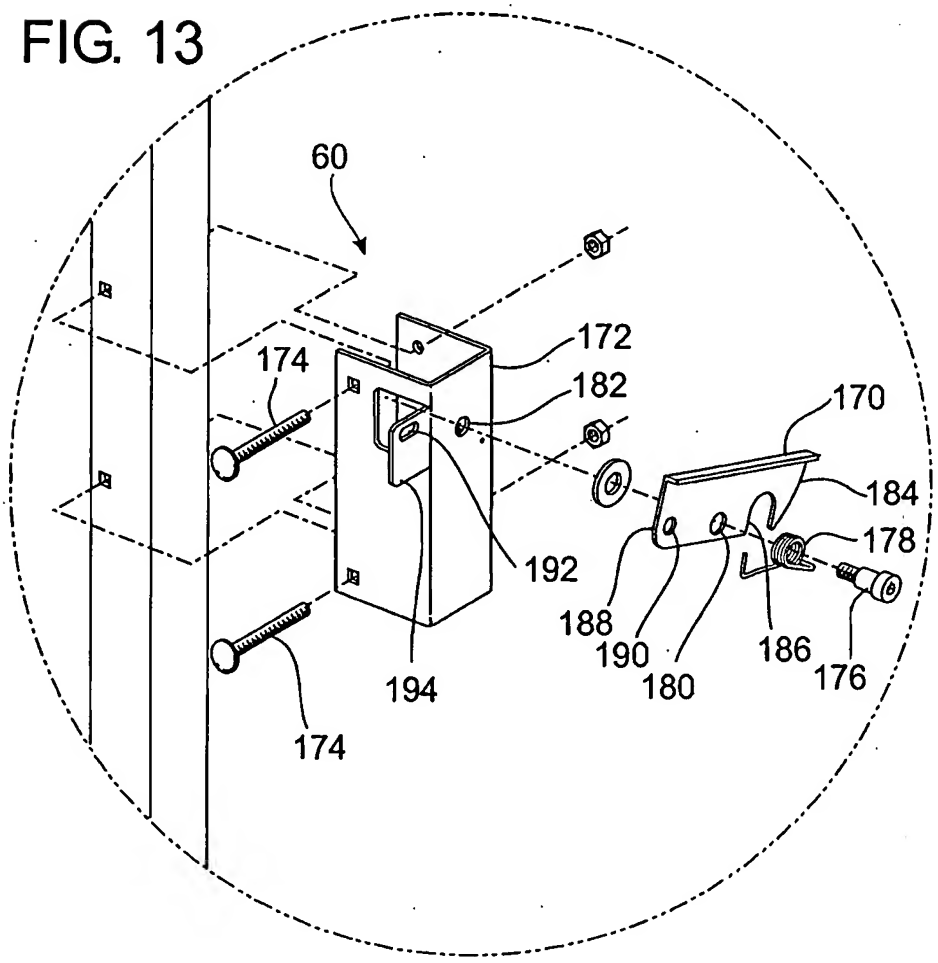
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FIG. 14

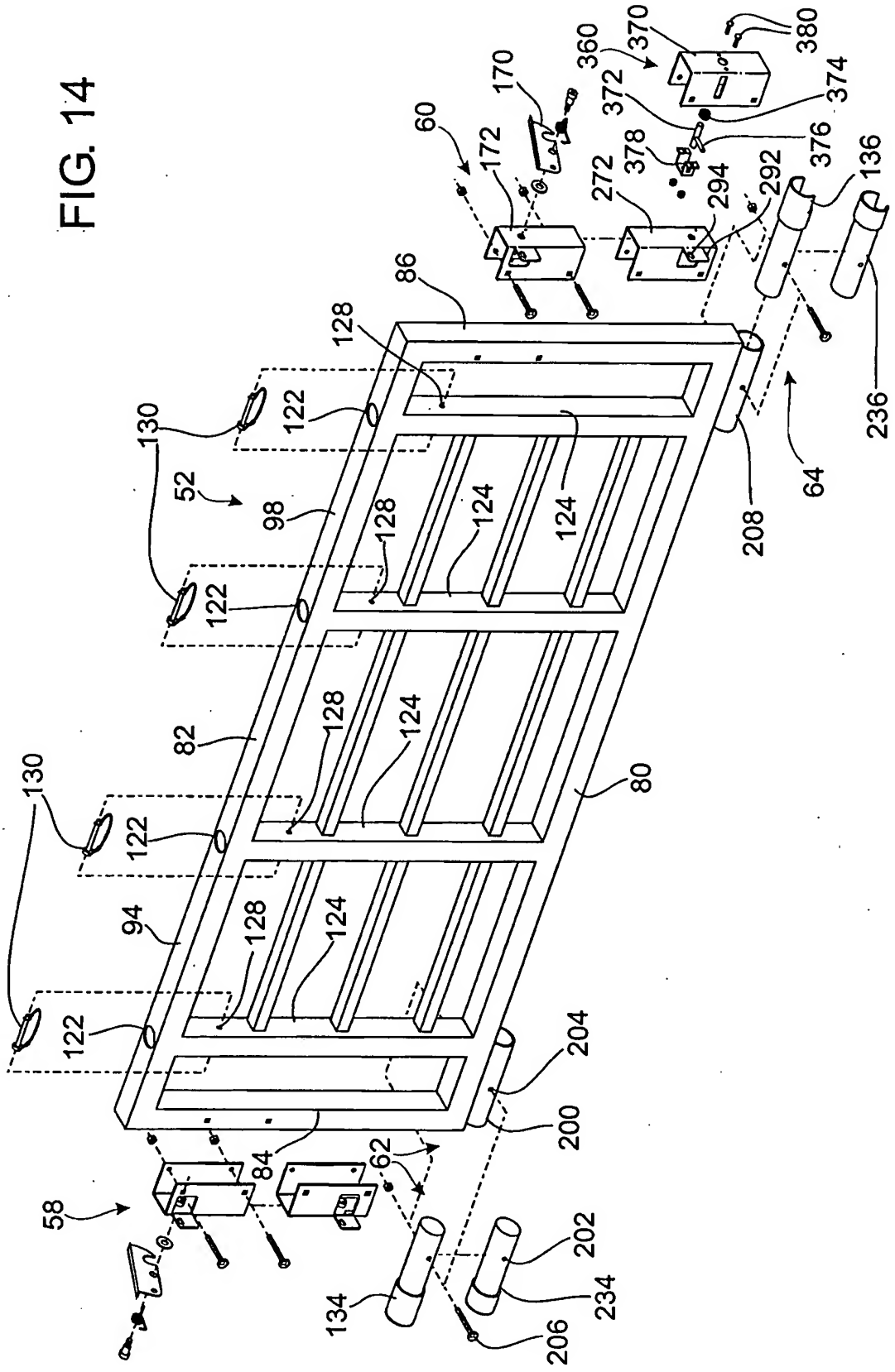
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FIG. 15

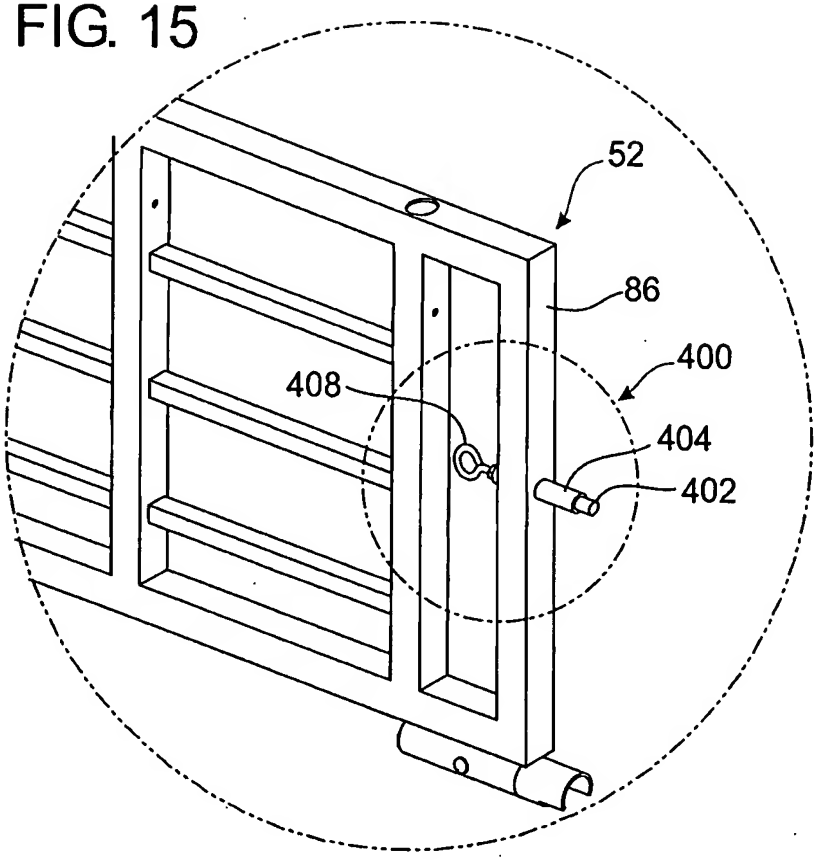
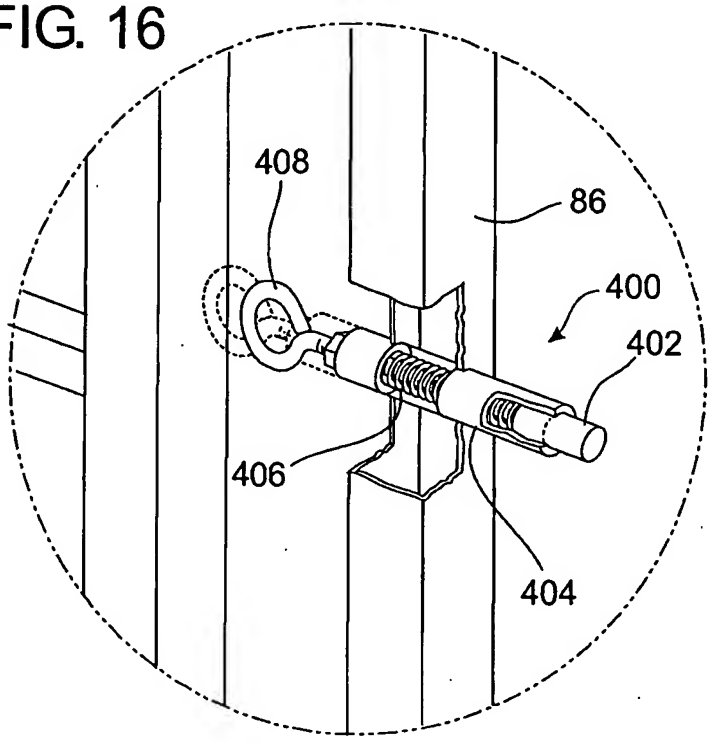


FIG. 16



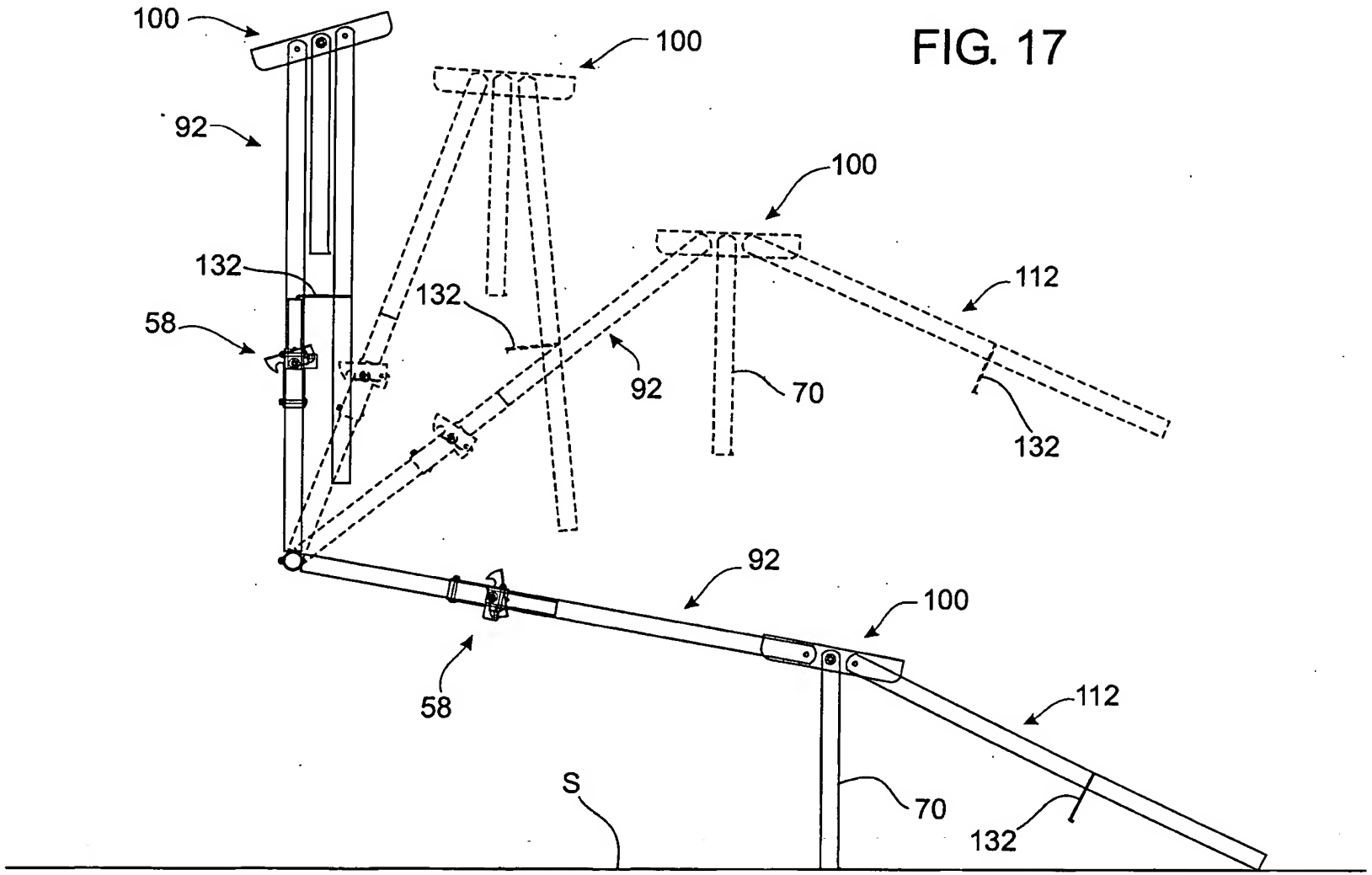


FIG. 17

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Docket No. **HUG107**
Anticipated Classification of this Application:
Class: ___ Subclass: _____
S/N: **Unknown**
Prior Application: **09/750, 498**
Examiner: **Fox, C.**
Art Unit: **3652**

Box PATENT APPLICATION
Assistant Commissioner for Patents
Washington, D.C. 20231

COMBINED DECLARATION AND POWER OF ATTORNEY

As below named inventor, I hereby declare that:

TYPE OF DECLARATION

This declaration is for a **continuation-in-part application** filed February 17, 2004.

INVENTORSHIP, TITLE AND SPECIFICATION IDENTIFICATION

My residence, post office address and citizenship are as stated below next to my name. I believe I am the original, first, and sole inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled:

PICKUP TAILGATE LOADING RAMP

the specification of which **was filed December 29, 2000 as Serial No. 09/750,498 and amended by PRELIMINARY AMENDMENT filed herewith.** A substitute specification, including new claims, is entered by PRELIMINARY AMENDMENT filed herewith.

ACKNOWLEDGMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with title 37, Code of Federal Regulations, § 1.56. In compliance with this duty, there is attached a copy of the information disclosure document originally filed in accordance with 37 CFR 1.98.

PRIORITY CLAIMS

I hereby claim the benefit under Title 35, United States Code, § 120 of the following pending United States application:

Application Serial No.:	**09/750,498**
Date Filed:	**December 29, 2000**
Title as originally filed:	**Pickup Tailgate Loading Ramp**
Title as last amended:	**Pickup Tailgate Loading Ramp**

Insofar as the subject matter of each of the claims of this application is not disclosed in that prior application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose information that is material to the examination of this application, namely, information where there is substantial likelihood that a reasonable Examiner would consider it important in deciding whether to allow the application to issue as a patent, which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

No foreign applications or PCT international applications have been filed and no foreign priority benefits are claimed.

POWER OF ATTORNEY

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

James T. Robinson
Registration No. 33,548

Send correspondence to: **James T. Robinson**
222 East Main Street
Norman, OK 73069-1303

Direct telephone calls to: **James T. Robinson**
(405) 292-1911

DECLARATION

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of **inventor**: **George M. Huggins**

Inventor's signature: George M. Huggins

Date: 2-17-04

Country of Citizenship: **United States of America**

Residence: **1678 County Street 2982**
Blanchard, OK 73010

Post Office Address: **1678 County Street 2982**
Blanchard, OK 73010

THE DECLARATION ENDS WITH THIS PAGE.

Please type a plus sign (+) inside this box → ☐

PTO/SB/01 (12-97)
Approved for use through 9/30/00. OMB 0651-0032
Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

☒ Declaration Submitted with Initial Filing OR ☐ Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)

Attorney Docket Number	.3527
First Named Inventor	George M. Huggins
COMPLETE IF KNOWN	
Application Number	/
Filing Date	
Group Art Unit	
Examiner Name	

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

PICKUP TAILGATE LOADING RAMP

(Title of the invention)

☒ the specification of which is attached hereto

OR

☐ was filed on (MM/DD/YYYY) _____ as United States Application Number or PCT International Application Number _____ and was amended on (MM/DD/YYYY) _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached? YES	NO
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below.

Application Number(s)	Filing Date (MM/DD/YYYY)	
		☐ Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

Please type a plus sign (+) inside this box → ⊞

PTO/SB/01 (12-97)
Approved for use through 9/30/00. OMB 0651-0032
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

DECLARATION — Utility or Design Patent Application

I hereby claim the benefit under 35 U.S.C. 120 of any United States application(s), or 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application or PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number (If applicable)

☐ Additional U.S. or PCT international application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

As a named inventor, I hereby appoint the following registered practitioner(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith: ☒ Customer Number 001240 → Place Customer Number Bar Code Label here

OR

☐ Registered practitioner(s) name/registration number listed below

Name	Registration Number	Name	Registration Number
Robert K. Rhea	20,045		

☐ Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/02C attached hereto.

Direct all correspondence to: ☒ Customer Number or Bar Code Label 001240 OR ☒ Correspondence address below

Name	Robert K. Rhea				
Address	5350 S. Western, Ste. 305				
Address					
City	Oklahoma City	State	OK	ZIP	73109
Country	USA	Telephone	405-634-1915	Fax	405-634-1981

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor: ☐ A petition has been filed for this unsigned inventor

Given Name (first and middle (if any))	Family Name or Surname
George M.	Huggins

Inventor's Signature	X George M. Huggins					Date	2-19-01
Residence: City	Blanchard	State	OK	Country	USA	Citizenship	USA
Post Office Address	Rt. #1, Box 48						
Post Office Address							
City	Blanchard	State	OK	ZIP	73010	Country	USA

☐ Additional inventors are being named on the ____ supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto

Sheet _____ of _____

FORM PTO-1449 (REV. 7-80) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTY. DOCKET NO. 3527 | SERIAL NO.

APPLICANT George M. Huggins

FILING DATE | GROUP

LIST OF PRIOR ART CITED BY APPLICANT

(Use several sheets if necessary)

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	AA			None Applicable			
	AB						
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES	TRANSLATION NO
	AL							
	AM							
	AN							
	AO							
	AP							

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

	AR		
	AS		
	AT		

EXAMINER | DATE CONSIDERED

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

December 20, 2000

PRIOR ART STATEMENT
IN THE ACCOMPANYING APPLICATION

Assistant Commissioner for Patents
Washington, D.C. 20231

#3527

Dear Sir:

Neither the inventor or the undersigned have knowledge of pertinent prior patents.

Respectfully submitted,
George M. Huggins

By: Robert K. Rhea
Robert K. Rhea, Patent Agent
Phone: 405-634-1915

RKR/bkf

PTO/SB/17 (2/98)
Approved for use through 9/30/2000. OMB 0651-0032
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
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FEE TRANSMITTAL

Patent fees are subject to annual revision on October 1.
These are the fees effective October 1, 1997.
Small Entity payments must be supported by a small entity statement, otherwise large entity fees must be paid. See Forms PTO/SB/09-12.
See 37 C.F.R. §§ 1.27 and 1.28.

TOTAL AMOUNT OF PAYMENT ($) 355.00

Complete if Known	
Application Number	
Filing Date	
First Named Inventor	George M. Huggins
Examiner Name	
Group / Art Unit	
Attorney Docket No.	3527

METHOD OF PAYMENT (check one)

1. [X] The Commissioner is hereby authorized to charge indicated fees and credit any over payments to:

Deposit Account Number: 18-1156
Deposit Account Name: Robert K. Rhea

☐ Charge Any Additional Fee Required Under 37 C.F.R. §§ 1.16 and 1.17
☐ Charge the Issue Fee Set in 37 C.F.R. § 1.18 at the Mailing of the Notice of Allowance

2. ☐ Payment Enclosed:
☐ Check ☐ Money Order ☐ Other

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
101	709	201	355	Utility filing fee	355.
106	330	206	165	Design filing fee	
107	549	207	275	Plant filing fee	
108	709	208	355	Reissue filing fee	
114	150	214	75	Provisional filing fee	
SUBTOTAL (1)					($) 355.00

2. EXTRA CLAIM FEES

	Extra Claims		Fee from below		Fee Paid
Total Claims	7 - 20** =	0	X	0	0
Independent Claims	2 - 3** =	0	X	0	0
Multiple Dependent					0

**or number previously paid, if greater; For Reissues, see below

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
103	22	203	11	Claims in excess of 20
102	82	202	41	Independent claims in excess of 3
104	270	204	135	Multiple dependent claim, if not paid
109	82	209	41	** Reissue independent claims over original patent
110	22	210	11	** Reissue claims in excess of 20 and over original patent
SUBTOTAL (2)				($) -0-

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
105	130	205	65	Surcharge - late filing fee or oath	
127	50	227	25	Surcharge - late provisional filing fee or cover sheet	
139	130	139	130	Non-English specification	
147	2,520	147	2,520	For filing a request for reexamination	
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	
115	110	215	55	Extension for reply within first month	
116	400	216	200	Extension for reply within second month	
117	950	217	475	Extension for reply within third month	
118	1,510	218	755	Extension for reply within fourth month	
128	2,060	228	1,030	Extension for reply within fifth month	
119	310	219	155	Notice of Appeal	
120	310	220	155	Filing a brief in support of an appeal	
121	270	221	135	Request for oral hearing	
138	1,510	138	1,510	Petition to institute a public use proceeding	
140	110	240	55	Petition to revive - unavoidable	
141	1,370	241	000	Petition to revive - unintentional	
142	1,370	242	000	Utility issue fee (or reissue)	
143	450	243	225	Design issue fee	
144	670	244	335	Plant issue fee	
122	130	122	130	Petitions to the Commissioner	
123	50	123	50	Petitions related to provisional applications	
126	240	126	240	Submission of Information Disclosure Stmt	
581	40	581	40	Recording each patent assignment per property (times number of properties)	
146	790	246	395	Filing a submission after final rejection (37 CFR 1.129(a))	
149	790	249	395	For each additional invention to be examined (37 CFR 1.129(b))	
Other fee (specify)					
Other fee (specify)					
*Reduced by Basic Filing Fee Paid				SUBTOTAL (3)	($) -0-

SUBMITTED BY				Complete if applicable	
Typed or Printed Name	Robert K. Rhea			Reg. Number	20,045
Signature	Robert K Rhea	Date	12-20-00	Deposit Account User ID	

Please type a plus sign (+) inside this box → ⊞

PTO/SB/05 (2/98)
Approved for use through 09/30/2000. OMB 0651-0032
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 C.F.R. § 1.53(b))

Attorney Docket No.	3527
First Inventor or Application Identifier	George M. Huggins
Title	PICKUP TAILGATE LOADING RAMP
Express Mail Label No.	

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO: Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231

1. [X] * Fee Transmittal Form *(e.g., PTO/SB/17)* *(Submit an original and a duplicate for fee processing)*
2. [X] Specification [Total Pages 11] *(preferred arrangement set forth below)*
   - Descriptive title of the Invention
   - Cross References to Related Applications
   - Statement Regarding Fed sponsored R & D
   - Reference to Microfiche Appendix
   - Background of the Invention
   - Brief Summary of the Invention
   - Brief Description of the Drawings *(if filed)*
   - Detailed Description
   - Claim(s)
   - Abstract of the Disclosure
3. [X] Drawing(s) *(35 U.S.C. 113)* [Total Sheets 3]
4. Oath or Declaration [Total Pages 2]
   a. [X] Newly executed (original or copy)
   b. [ ] Copy from a prior application (37 C.F.R. § 1.63(d)) *(for continuation/divisional with Box 17 completed)* *[Note Box 5 below]*
      i. [ ] DELETION OF INVENTOR(S) Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. §§ 1.63(d)(2) and 1.33(b).
5. [ ] Incorporation By Reference *(useable if Box 4b is checked)* The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered to be part of the disclosure of the accompanying application and is hereby incorporated by reference therein.
6. [ ] Microfiche Computer Program *(Appendix)*
7. Nucleotide and/or Amino Acid Sequence Submission *(if applicable, all necessary)*
   a. [ ] Computer Readable Copy
   b. [ ] Paper Copy (identical to computer copy)
   c. [ ] Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

8. [ ] Assignment Papers (cover sheet & document(s))
9. [ ] 37 C.F.R.§3.73(b) Statement *(when there is an assignee)* [ ] Power of Attorney
10. [ ] English Translation Document *(if applicable)*
11. [X] Information Disclosure Statement (IDS)/PTO-1449 [X] Copies of IDS Citations
12. [ ] Preliminary Amendment
13. [X] Return Receipt Postcard (MPEP 503) *(Should be specifically itemized)*
14. [X] * Small Entity Statement(s) *(PTO/SB/09-12)* [ ] Statement filed in prior application, Status still proper and desired
15. [ ] Certified Copy of Priority Document(s) *(if foreign priority is claimed)*
16. [ ] Other: .....

NOTE FOR ITEMS 1 & 14: IN ORDER TO BE ENTITLED TO PAY SMALL ENTITY FEES, A SMALL ENTITY STATEMENT IS REQUIRED (37 C.F.R. § 1.27), EXCEPT IF ONE FILED IN A PRIOR APPLICATION IS RELIED UPON (37 C.F.R. § 1.28).

17. If a CONTINUING APPLICATION, *check appropriate box, and supply the requisite information below and in a preliminary amendment:*
    [ ] Continuation [ ] Divisional [ ] Continuation-in-part (CIP) of prior application No: _____/_____
    Prior application information: Examiner _____ Group / Art Unit: _____

18. CORRESPONDENCE ADDRESS

[X] Customer Number or Bar Code Label 001240 *(Insert Customer No. or Attach bar code label here)* or [ ] Correspondence address below

Name	Robert K. Rhea				
Address	5350 S. Western, Ste. 305				
City	Oklahoma City	State	OK	Zip Code	73109
Country	USA	Telephone	405-634-1915	Fax	405-634-1981

Name (Print/Type)	Robert K. Rhea	Registration No. (Attorney/Agent)	20,045
Signature	Robert K. Rhea	Date	12-20-00

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231.

PICKUP TAILGATE LOADING RAMP

CROSS REFERENCE TO RELATED APPLICATIONS

Not applicable.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

Not applicable.

BACKGROUND OF THE INVENTION

This present invention relates to loading ramps and more particularly combination pickup truck tailgate and loading ramp.

1. Field of the Invention

2. Description of the Prior Art

When loading articles of considerable mass into a pickup bed it has been common practice to lower the pickup tailgate and provide a temporary ramp, particularly if the article to be loaded is equipped with wheels such as riding lawn mowers or golf carts, in which the temporary ramp consists of lengths of lumber, such as 2 by 8 or 2 by 12, extending from the rearward edge of the pickup tailgate to the surface of the earth. Additionally, ramp ends or ramp feet which are attached to the respective ends of such temporary lumber ramps are commercially available to form a smooth transition from the surface of the earth and the upper end portion of the temporary ramp and the horizontal surface of the tailgate.

This invention is distinctive over such ramps for pickup trucks by providing one end of the ramp of this invention to

serve as a pickup tailgate and including pairs of rigidly connected track forming frames extending from the tailgate position to the surface of the earth in which these frames are hinged intermediate their ends and provided with a gravity positioned support.

BRIEF SUMMARY OF THE INVENTION

A rectangular frame having overall dimensions substantially equal with the perimeter dimensions of the standard tailgate for the pickup truck to be equipped with a loading ramp is provided with hinge and latch mounting members securing the rectangular main frame to the pickup bed for vertical movement about a horizontal axis in opening and closing the tailgate portion. Additionally two pairs of elongated rectangular frames cooperatively hinged together are rigidly connected at one end in laterally spaced relation to the top edge surface forming the rectangular main frame with the other ends of the pairs of hinged frames resting on the surface of the earth and supported at their hinged position by a gravity positioned U-shaped frame pivotally depending from the hinge position of the track forming frames. Each of the main frame and hinged rectangular frames are transversely provided with a plurality of equally spaced apart right angle cross members forming an open frame work for supporting the wheels of vehicles being moved up or down the ramp from the surface of the earth to the bed of the pickup or vice versa. When not in use as a ramp the main frame forms the tailgate of a pickup bed

and the remaining portion of the ramp is disposed upright adjacent the vertical plane of the tailgate for ease in lowering the ramp to a loading or unloading position by simply lowering the tailgate and extending the hinged frames rearwardly to the surface of the earth.

The principal object of this invention is to provide a pickup loading ramp having a tailgate portion, which remains connected with the pickup at all times and is easily moved from a pickup bed closed position to a pickup bed ramp loading or unloading position for wheel equipped vehicles.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

Figure 1 is a perspective view of the loading ramp in operative position on a pickup truck, the truck chassis being omitted for clarity;

Figure 2 is a rearward elevational view of the loading ramp when folded to pickup tailgate closed position, of the pickup cab omitted for clarity;

Figure 3 is a top plan view of the loading ramp, per se;

Figure 4 is a fragmentary vertical cross sectional view, to a different scale, taken substantially along the line 4---4 of Fig. 3;

Figure 5 is a perspective view of the loading ramp in operative position when viewed from one side;

Figure 6 is a fragmentary side elevational view of the loading ramp when folded to tailgate closed position;

Figure 7 is a top plan view of a modified ramp for load-

ing and unloading three wheel vehicles;

Figure 8 is a top plan view of loading ramp track sections forming the alternative embodiment of Fig. 7; and,

Figure 9 is an elevational view of the hinged track support.

DETAILED DESCRIPTION OF THE INVENTION

Referring first to Figs. 1 and 3, the reference numeral 10 indicates a generally rectangular frame in overall configuration lying in a common plane, forming a ramp, pivotally connected at one end with the tailgate position of a conventional pickup truck 12.

The ramp 10 includes a rectangular tailgate portion 14 having overall dimensions substantially equal with the overall dimensions of a tailgate of the pickup truck 10. The tailgate section 14 comprises a base rail 16 connected, in parallel relation, with a top rail 18 both formed from tubing material and interconnected by a pair of tubular end rails 20 and 22. A pair of hinge members 24 cooperating with the tailgate hinges, not shown, project outwardly from respective end portions of the base rail 16 at its juncture with the end rails 20 and 22, respectively. Respective end portions of the top rail support a pair of latches 26 for securing the tailgate 14 in closed position.

The ramp 10 further includes a pair of elongated ramp tracks 28 and 30 rigidly connected at one end in laterally spaced relation with the top rail 18 of the gate section 14.

Since the ramp forming tracks 28 and 30 are identical, only the track 28 is described, in detail in the interest of brevity.

The track 28 comprises a pair of U-shaped frame members 32 and 34 having leg end portions 35-36 and 38-39 respectively disposed in confronting relation and pivotally connected with one flange of a pair of right angle hinge forming members 42 and 43 for vertical pivoting movement of the U-shape member 34 toward and away from the underside of the other U-shaped member 32, as viewed in Fig. 3. The bight portion 44 of the U-shaped member 32 is rigidly secured longitudinally to one end portion of the tailgate top rail 18 in spaced relation with respect to the other track 30. The bight portion 46 of the U-shaped member 34 is normally supported by the surface of the earth 47 (Fig. 5).

A track support member 50 (Fig. 9) comprising a U-shaped member having a tubular bight portion 51 and upstanding angular metal legs 52 and 54 pivotally connected with the hinge forming members 42 and 43 between the confronting ends of the legs of the U-shaped members 32 and 34. The track support 50 is normally vertically disposed, by gravity, and contacts the surface of the earth 47 below the respective track 28 and 30 when the loading ramp 10 is disposed in loading position (Fig. 5).

The track 28 further includes a plurality of transverse cross members 56 extending between the legs of the U-shaped

members 32 and 34 in longitudinal equally spaced relation. Each of the cross members 56 comprise a length of rigid right angle metal disposed with the edges of the angular flanges directed upwardly as viewed in Fig. 4 for increased frictional resistance against the wheels of vehicles moving up or down the plane of the ramp during the loading or unloading movement. Similarly, the tailgate section 14 is provided with a plurality of longitudinally cross members 58 extending between the end rails 20 and 22 and are identical in transverse cross section with the track cross members 56. A plurality of brace members 59 extend between the tailgate bottom rail 16 and top rail 18 for rigidity.

OPERATION

In operation of the embodiment 10, assuming the factory equipped tailgate of the truck 12 has been removed, the tailgate section hinge members 24 are cooperatively received by the hinge members of the tailgate, not shown, on the pickup truck bed. The latches 26 secure the tailgate section 14 when in closed position to the pickup bed side walls. When not in use the ramp track members 28 and 30 are disposed in the position illustrated by Fig. 6 with the U-shaped members 34 depending from the hinge members 42 and 43 and the track support members 50 interposed between the U-shaped frames 32 and 34.

When it is desired to utilize the track for loading and unloading a wheeled vehicle, not shown, the tailgate latches

26 are released and the ramp 10 is pivoted downwardly and rearwardly about the horizontal axis of the tailgate hinge members 24 until the bight portion 46 of the U-shaped member 34 rests on the surface of the earth 47 and gravity disposes the track support 50 in a vertical position (Fig. 5). Thereafter a wheeled vehicle, not shown, under its own power may be driven up or down the plane formed by the loading ramp 10.

An alternative embodiment 10' is illustrated by Fig. 7 in the event it is desired to load a three wheel vehicle into the pickup bed. A temporary track 28' (Fig. 8) is interposed between the tracks 28 and 30 to supply a track for the single front or rear wheel of a three wheel vehicle in negotiating the ramp 10'. The temporary track 28' similarly comprises a U-shaped frame member 32' and a companion U-shaped frame member 34', each having their respective legs disposed in confronting relation. The bight portion 44' of the U-shaped member 32' is interposed between the tracks 28 and 30 adjacent the tailgate top rail 18. The U-shaped member 32' is maintained in interposed relation between the tracks 28 and 30 by pairs of flanges 60 and 62 secured in transverse opposition to the legs of the U-shaped member 32' and overlap the adjacent legs of the members 28 and 30. Similarly the other U-shaped member 34' is provided with pairs of rigidly connected flanges 64 and 66 similarly overlapping the legs of the adjacent tracks 28 and 30 to complete the configuration of the alternative embodiment 10'.

Obviously the invention is susceptible to changes or alterations without defeating its practicability. Therefore, I do not wish to be confined to the preferred embodiment(s) shown in the drawing(s) and described herein.

I claim:

CLAIMS

1. A pickup truck tailgate and loading ramp, comprising:
main frame means including a base rail and a top rail for occupying the position and function of a pickup tailgate; and,
elongated frame means connected at one end with said main frame means top rail for forming a loading ramp track when in tailgate lowered position.

2. The truck tailgate and loading ramp according to claim 1 in which said frame means comprises:
two pairs of longitudinally hingedly interconnected frames rigidly connected in laterally spaced relation with said main frame top rail; and,
a ramp track support hingedly depending from the hinged position of said pairs of frames.

3. The truck tailgate and loading ramp according to claim 2 and further including:
a plurality of cross members extending transversely of said main frame and said one frame in longitudinal spaced-apart relation.

4. The truck tailgate and loading ramp according to claim 1 in which said frame means comprises:
at least one pair of longitudinally hingedly interconnected frames; and,
a ramp track support hingedly depending from the hinged position of said one pair of frames.

5. The truck tailgate and loading ramp according to claim 4 and further including:

a plurality of cross members extending transversely of said main frame and said one frame in longitudinal spaced-apart relation.

6. A pickup truck tailgate and loading ramp, comprising:

main frame means including end rails connected with a base rail and a top rail for occupying the position and function of a pickup tailgate;

pairs of elongated U-shaped frame means having hingedly connected legs and rigidly connected at one end in laterally spaced relation with said main frame means top rail for forming loading ramp tracks when in tailgate lowered position; and,

a ramp track support hingedly depending from the hinged position of said pairs of frames.

7. The truck tailgate and loading ramp according to claim 6 and further including:

a plurality of cross members extending transversely of said main frame and said pairs of frames in longitudinal spaced-apart relation.

ABSTRACT OF THE DISCLOSURE

A pickup truck tailgate and loading ramp is formed by a main frame dimensioned to be hingedly received by a given pickup bed. Two pairs of hingedly interconnected frames are rigidly secured to the top rail of the tailgate section and form a pair of ramp tracks when in tailgate lowered position. When not in use the track forming frames are disposed rearwardly of the closed tailgate section.

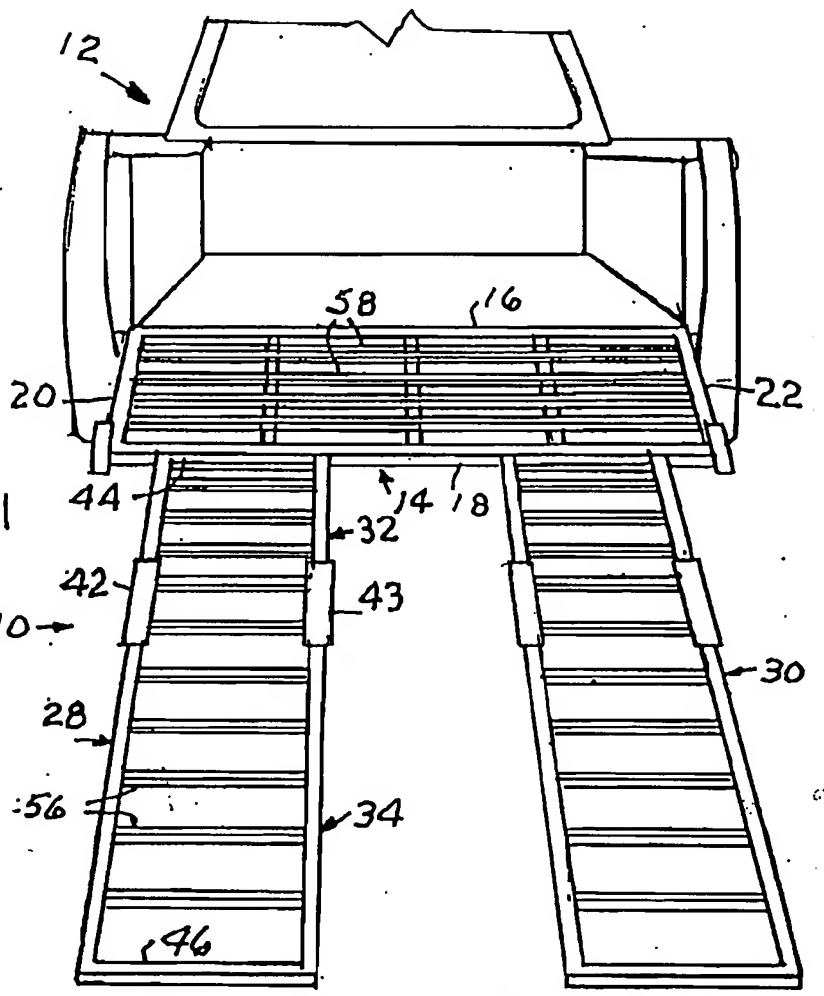
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FIG. 1

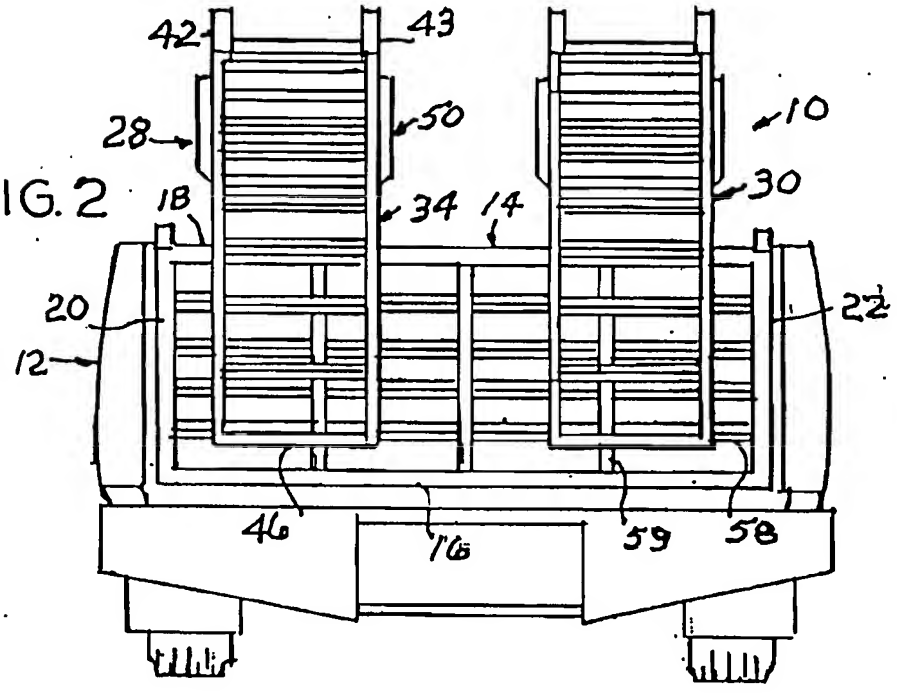
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FIG. 2

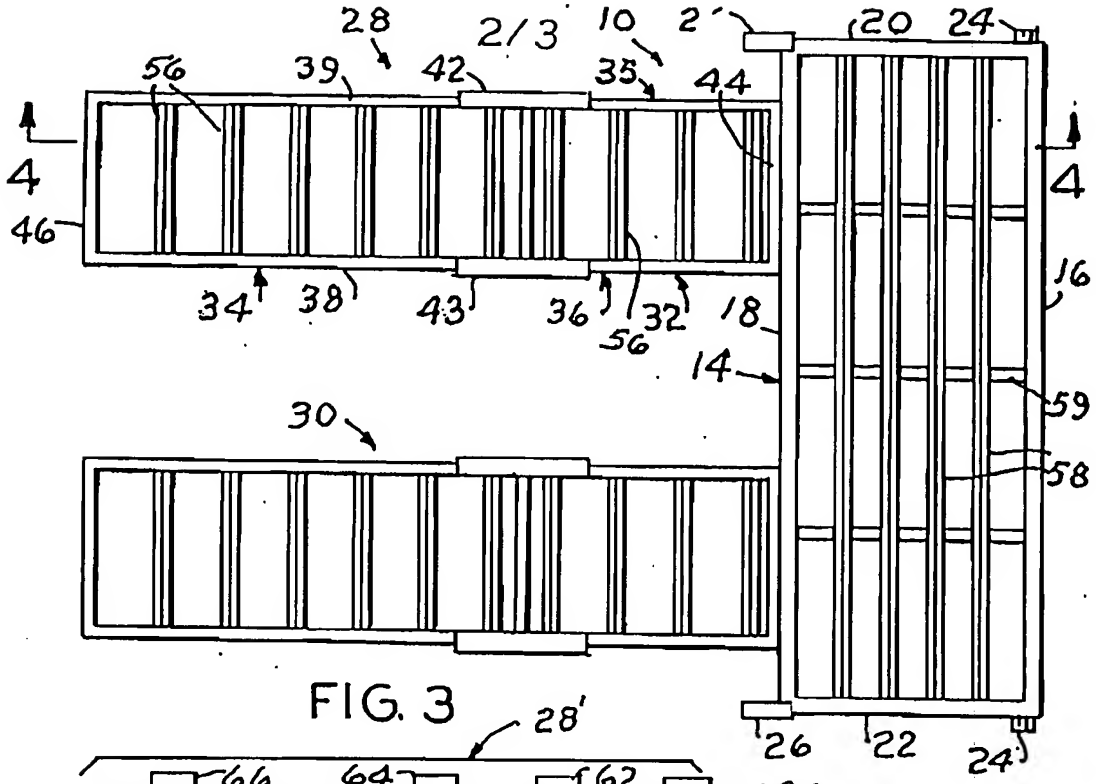


FIG. 3

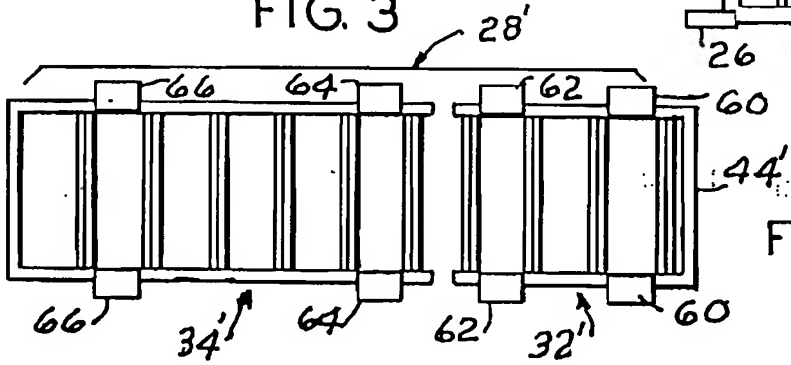


FIG. 8

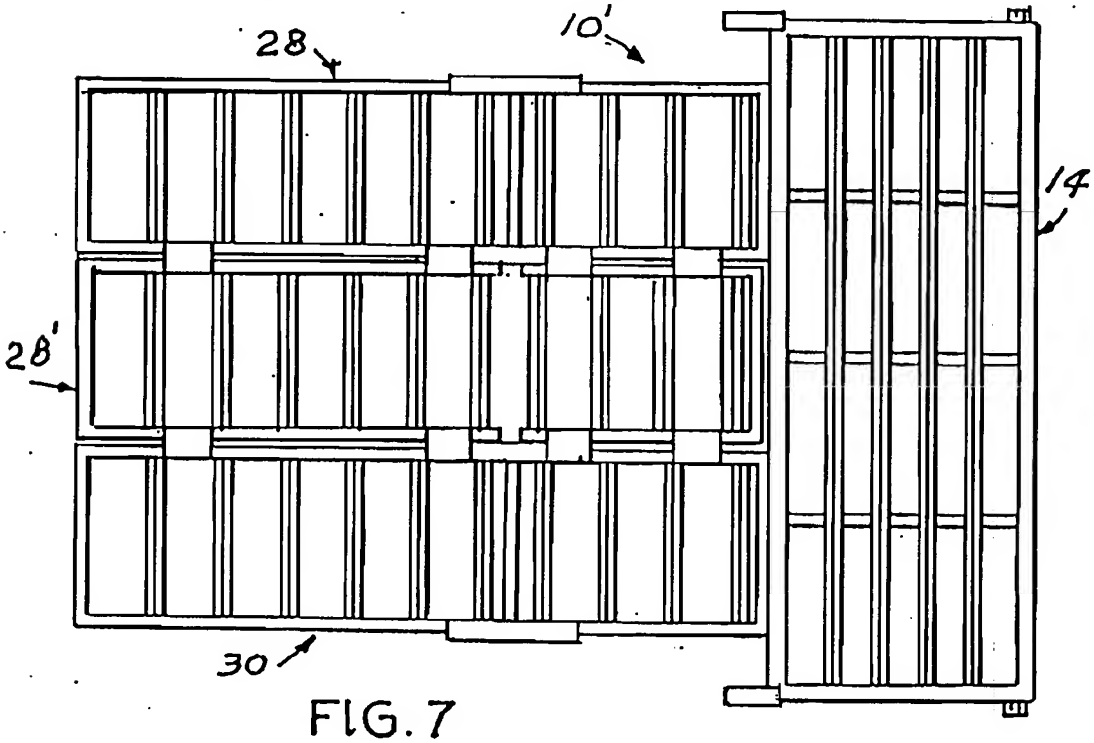
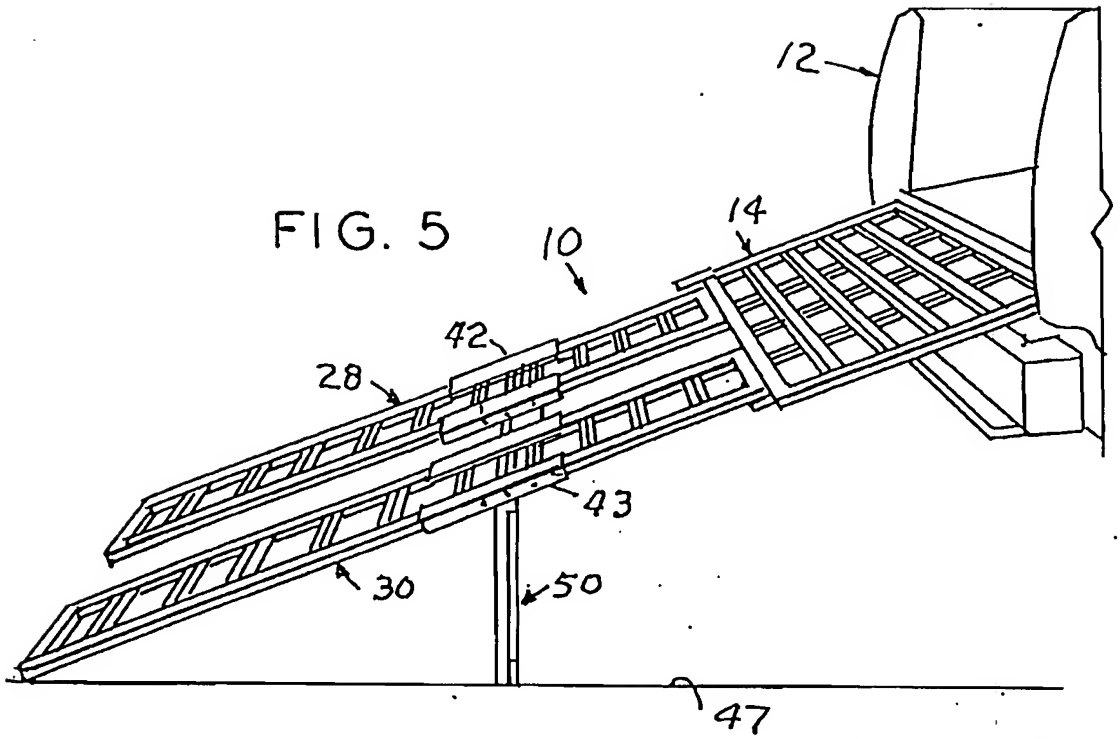


FIG. 7

FIG. 5



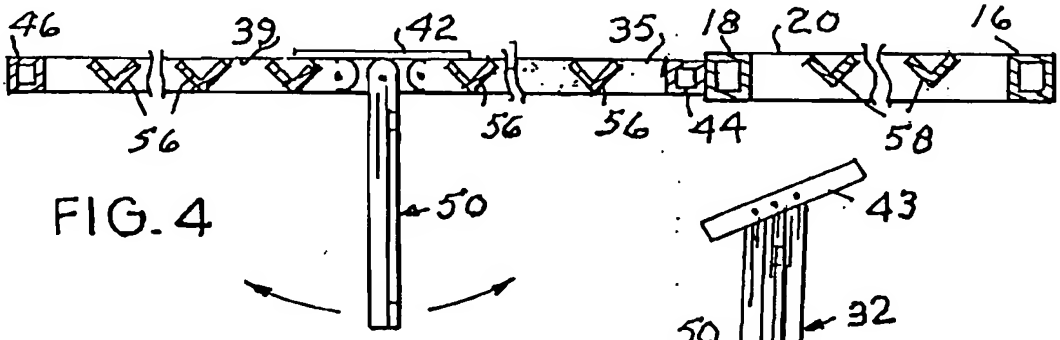


FIG. 4

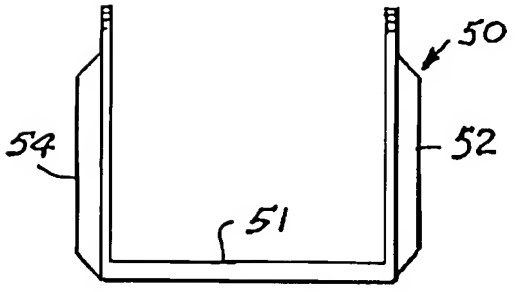
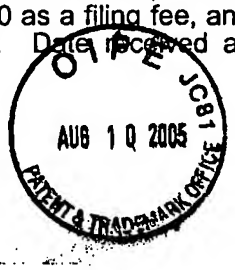


FIG. 9

FIG. 6

A **PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED UNINTENTIONALLY** filing (3 pages) for a **Pickup Tailgate Loading Ramp** has been received by the USPTO. The sole inventor is **George M. Huggins**, D/N HUG107, and the documents filed include a PETITION FOR REVIVAL OF PATENT ABANDONED UNINTENTIONALLY (4 pages), a substitute Specification, Claims, and Abstract with highlights (15 pages), a substitute Specification, Claims, and Abstract without highlights (15 pages), Papers Filed February 17, 2004 (60 pages), Formal drawings (10 pages), INFORMATION DISCLOSURE STATEMENT with attachments, Check No. 2873 in the amount of $750.00 as a filing fee, and this receipt verification post card. Date received and is stamped hereon.



THIS PACKET RECEIVED BY USPTO AUGUST 10, 2005

EXCLUSIVITY-LAW, INC.
222 EAST MAIN
NORMAN, OK 73069-1303
(405) 292-1911

FIRST FIDELITY BANK, N.A.
NORMAN, OK 73069
39-269/1030

2873

8/8/2005

PAY TO THE ORDER OF Commissioner of Patents & Trademarks $**750.00

Seven Hundred Fifty and 00/100********** DOLLARS

Commissioner of Patents & Trademarks

MEMO HUG107

AUTHORIZED SIGNATURE

Details on Back. Security Features Included

A **PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED UNINTENTIONALLY** filing (3 pages) for a **Pickup Tailgate Loading Ramp** has been received by the USPTO. The sole inventor is **George M. Huggins**, D/N HUG107, and the documents filed include a PETITION FOR REVIVAL OF PATENT ABANDONED UNINTENTIONALLY (4 pages), a substitute Specification, Claims, and Abstract with highlights (15 pages), a substitute Specification, Claims, and Abstract without highlights (15 pages), Papers Filed February 17, 2004 (60 pages), Formal drawings (10 pages), INFORMATION DISCLOSURE STATEMENT with attachments, Check No. 2873 in the amount of $750.00 as a filing fee, and this receipt verification post card. Date received and is stamped hereon.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	**Huggins, George M.**	)	U.S. Appl. No. **10/781,483**
Patent No.:	**Unknown**	)	Filed: **February 17, 2004**
Issue Date:	**Unknown**	)	
For:	**Pickup Tailgate Loading Ramp**	)	

Mail Stop Petition
Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED UNINTENTIONALLY UNDER 37 CFR 1.137b

---

CERTIFICATION UNDER 37 CFR 1.8a

I hereby certify that this TRANSMITTAL and the documents referred to as enclosed therein are being deposited with the United States Postal Service on this 8th day of **August, 2005** in a first class envelope with sufficient postage addressed to: Mail Stop Petition, Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450.

James T. Robinson
Name of Person Mailing Paper

Signature of Person Mailing Paper

Transmitted herewith for filing is the patent application of

Inventor: **George M. Huggins**

For: **Pickup Tailgate Loading Ramp**

1. **Papers Filed February 17, 2004 as follows:**

Papers From Parent Application Enclosed with CIP Application:

Original application:

8	Pages of Specification
2	Pages of Claims
1	Page of Abstract
3	Sheets of Formal Drawings
2	Pages – Declaration for Utility or Design
1	Pages – "Prior Art Cited by Applicant"
1	Page – Prior Art Statement
1	Page – Fee Transmittal
1	Page – Utility Patent Application Transmittal

CIP Application Documents, including:

6	Pages of Continuation-in-part Application Filing
12	Pages of New Specification
2	Pages of New Claims (1 claim)
1	Page of Abstract
10	Sheets of NEW formal drawings (Figures 1-17)
3	Pages of Combined Declaration & Power of Attorney
2	Pages of Preliminary Amendment
2	Pages of PETITION TO MAKE SPECIAL (APPLICANT'S AGE)
1	Receipt verification post card
1	Check No. 2219 for $385.00 (small entity filing fee)

2. **Petition For Revival Of Patent Abandoned Unintentionally Under 37 CFR 1.137b**

3. **Drawings**

- Formal drawings filed with CIP Application.

4. **Other Documents Enclosed**

- Marked-up substitute specification, claims, and abstract (changes highlighted).
- Substitute specification, claims, and abstract (clean copy).
- INFORMATION DISCLOSURE STATEMENT (2 pages), with following attachments:
  - PTO Form/SB/08A (6 pages)

- Canadian Patent Document No. 2,219,754
- Canadian Patent Document No. 2,028,014
- PTO Form/SB/08B
- Check Number 2873 in the amount of $750.00.
- Receipt verification postcard.

5. Fee Payment Being Made At This Time

Enclosed is the Filing Fee ($750.00).

Total fees enclosed: $750.00

6. Method of Payment of Fees

Check No. 2873 in the amount of **$750.00.**

Please refund any overpayment to applicant's attorney.

Dated: August 8, 2005

James T. Robinson, Reg. No. 33,548
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222 East Main Street
Norman, OK 73069-1303
Telephone Number 405.292.1911
Facsimile Number 405.321.1104
Email james.robinson@askeli.info

ATTORNEY FOR APPLICANT

Please type a plus sign (+) inside this box → ☐

PTO/SB/01 (12-97)
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DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

☒ Declaration Submitted with Initial Filing OR ☐ Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)

Attorney Docket Number	3527
First Named Inventor	George M. Huggins
COMPLETE IF KNOWN	
Application Number	/
Filing Date	
Group Art Unit	
Examiner Name	

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

PICKUP TAILGATE LOADING RAMP

(Title of the Invention)

the specification of which
☐ is attached hereto
OR
☐ was filed on (MM/DD/YYYY) ☐ as United States Application Number or PCT International Application Number ☐ and was amended on (MM/DD/YYYY) ☐ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached? YES	NO
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below.

Application Number(s)	Filing Date (MM/DD/YYYY)

☐ Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

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DECLARATION — Utility or Design Patent Application

I hereby claim the benefit under 35 U.S.C. 120 of any United States application(s), or 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application or PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number (If applicable)

☐ Additional U.S. or PCT international application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

As a named inventor, I hereby appoint the following registered practitioner(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith: ☒ Customer Number 001240 → Place Customer Number Bar Code Label here

OR ☐ Registered practitioner(s) name/registration number listed below

Name	Registration Number	Name	Registration Number
Robert K. Rhea	20,045		

☐ Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/02C attached hereto.

Direct all correspondence to: ☒ Customer Number or Bar Code Label 001240 OR ☒ Correspondence address below

Name	Robert K. Rhea				
Address	5350 S. Western, Ste. 305				
Address					
City	Oklahoma City	State	OK	ZIP	73109
Country	USA	Telephone	405-634-1915	Fax	405-634-1981

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor: ☐ A petition has been filed for this unsigned inventor

Given Name (first and middle [if any])	Family Name or Surname
George M.	Huggins

Inventor's Signature	X George M. Huggins					Date	12-19-01
Residence: City	Blanchard	State	OK	Country	USA	Citizenship	USA
Post Office Address	Rt. #1, Box 48						
Post Office Address							
City	Blanchard	State	OK	ZIP	73010	Country	USA

☐ Additional inventors are being named on the ___ supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto

Sheet _____ of _____

FORM PTO-1449 (REV. 7-80)

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

ATTY. DOCKET NO. 3527

SERIAL NO.

APPLICANT George M. Huggins

FILING DATE

GROUP

LIST OF PRIOR ART CITED BY APPLICANT

(Use several sheets if necessary)

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	AA			None Applicable			
	AB						
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES	TRANSLATION NO
	AL							
	AM							
	AN							
	AO							
	AP							

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

	AR		
	AS		
	AT		

EXAMINER

DATE CONSIDERED

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

December 20, 2000

PRIOR ART STATEMENT
IN THE ACCOMPANYING APPLICATION

Assistant Commissioner for Patents
Washington, D.C. 20231

#3527

Dear Sir:

Neither the inventor or the undersigned have knowledge of pertinent prior patents.

Respectfully submitted,
George M. Huggins

By: Robert K. Rhea

Robert K. Rhea, Patent Agent
Phone: 405-634-1915

RKR/bkf

PTO/SB/17 (2/98)
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FEE TRANSMITTAL

Patent fees are subject to annual revision on October 1.
These are the fees effective October 1, 1997.
Small Entity payments must be supported by a small entity statement, otherwise large entity fees must be paid. See Forms PTO/SB/09-12.
See 37 C.F.R. §§ 1.27 and 1.28.

TOTAL AMOUNT OF PAYMENT ($) 355.00

Complete If Known

Application Number	
Filing Date	
First Named Inventor	George M. Huggins
Examiner Name	
Group / Art Unit	
Attorney Docket No.	3527

METHOD OF PAYMENT (check one)

1. [X] The Commissioner is hereby authorized to charge indicated fees and credit any over payments to:

Deposit Account Number: 18-1156
Deposit Account Name: Robert K. Rhea

[ ] Charge Any Additional Fee Required Under 37 C.F.R. §§ 1.16 and 1.17
[ ] Charge the Issue Fee Set by 37 C.F.R. § 1.18 at the Mailing of the Notice of Allowance

2. [ ] Payment Enclosed:
[ ] Check [ ] Money Order [ ] Other

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
101	790	201	395	Utility filing fee	355.
106	330	206	165	Design filing fee	
107	540	207	270	Plant filing fee	
108	790	208	395	Reissue filing fee	
114	150	214	75	Provisional filing fee	

SUBTOTAL (1) ($) 355.00

2. EXTRA CLAIM FEES

		Extra Claims		Fee from below		Fee Paid
Total Claims	7 - 20** =	0	x	0	=	0
Independent Claims	2 - 3** =	0	x	0	=	0
Multiple Dependent					=	0

**or number previously paid, if greater; For Reissues, see below

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
103	22	203	11	Claims in excess of 20
102	82	202	41	Independent claims in excess of 3
104	270	204	135	Multiple dependent claim, if not paid
109	82	209	41	** Reissue independent claims over original patent
110	22	210	11	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($) -0-

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
105	130	205	65	Surcharge - late filing fee or oath	
127	50	227	25	Surcharge - late provisional filing fee or cover sheet.	
139	130	139	130	Non-English specification	
147	2,520	147	2,520	For filing a request for reexamination	
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	
115	110	215	55	Extension for reply within first month	
116	400	216	200	Extension for reply within second month	
117	950	217	475	Extension for reply within third month	
118	1,510	218	755	Extension for reply within fourth month	
128	2,060	228	1,030	Extension for reply within fifth month	
119	310	219	155	Notice of Appeal	
120	310	220	155	Filing a brief in support of an appeal	
121	270	221	135	Request for oral hearing	
138	1,510	138	1,510	Petition to institute a public use proceeding	
140	110	240	55	Petition to revive - unavoidable	
141	1,330	241	665	Petition to revive - unintentional	
142	1,330	242	665	Utility issue fee (or reissue)	
143	450	243	225	Design issue fee	
144	670	244	335	Plant issue fee	
122	130	122	130	Petitions to the Commissioner	
123	50	123	50	Petitions related to provisional applications	
126	240	126	240	Submission of Information Disclosure Stmt	
581	40	581	40	Recording each patent assignment per property (times number of properties)	
146	790	246	395	Filing a submission after final rejection (37 CFR 1.129(a))	
149	790	249	395	For each additional invention to be examined (37 CFR 1.129(b))	

Other fee (specify) _____
Other fee (specify) _____

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) ($) -0-

SUBMITTED BY

Typed or Printed Name	Robert K. Rhea	Complete (if applicable) Reg. Number	20,045
Signature	Robert K Rhea	Date 12-20-00	Deposit Account User ID

Please type a plus sign (+) inside this box → ⊞

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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 C.F.R. § 1.53(b))

Attorney Docket No.	3527
First Inventor or Application Identifier	George M. Huggins
Title	PICKUP TAILGATE LOADING RAMP
Express Mail Label No.	

ADDRESS TO: Assistant Commissioner for Patents
Box Patent Application
Washington, DC 20231

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. [X] * Fee Transmittal Form *(e.g., PTO/SB/17)*
(Submit an original and a duplicate for fee processing)
2. [X] Specification [Total Pages 11]
(preferred arrangement set forth below)
- Descriptive title of the Invention
- Cross References to Related Applications
- Statement Regarding Fed sponsored R & D
- Reference to Microfiche Appendix
- Background of the Invention
- Brief Summary of the Invention
- Brief Description of the Drawings *(if filed)*
- Detailed Description
- Claim(s)
- Abstract of the Disclosure
3. [X] Drawing(s) *(35 U.S.C. 113)* [Total Sheets 3]
4. Oath or Declaration [Total Pages 2]
   a. [X] Newly executed (original or copy)
   b. [ ] Copy from a prior application (37 C.F.R. § 1.63(d))
   (for continuation/divisional with Box 17 completed)
   [Note Box 5 below]
      i. [ ] DELETION OF INVENTOR(S)
      Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. §§ 1.63(d)(2) and 1.33(b).
5. [ ] Incorporation By Reference *(useable if Box 4b is checked)*
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered to be part of the disclosure of the accompanying application and is hereby incorporated by reference therein.
6. [ ] Microfiche Computer Program *(Appendix)*
7. Nucleotide and/or Amino Acid Sequence Submission
(if applicable, all necessary)
   a. [ ] Computer Readable Copy
   b. [ ] Paper Copy (identical to computer copy)
   c. [ ] Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

8. [ ] Assignment Papers (cover sheet & document(s))
9. [ ] 37 C.F.R.§3.73(b) Statement *(when there is an assignee)* [ ] Power of Attorney
10. [ ] English Translation Document *(if applicable)*
11. [X] Information Disclosure Statement (IDS)/PTO-1449 [X] Copies of IDS Citations
12. [ ] Preliminary Amendment
13. [X] Return Receipt Postcard (MPEP 503)
(Should be specifically itemized)
14. [X] * Small Entity Statement(s) *(PTO/SB/09-12)* [ ] Statement filed in prior application, Status still proper and desired
15. [ ] Certified Copy of Priority Document(s)
(if foreign priority is claimed)
16. [ ] Other: .....

NOTE FOR ITEMS 1 & 14: IN ORDER TO BE ENTITLED TO PAY SMALL ENTITY FEES, A SMALL ENTITY STATEMENT IS REQUIRED (37 C.F.R. § 1.27), EXCEPT IF ONE FILED IN A PRIOR APPLICATION IS RELIED UPON (37 C.F.R. § 1.28).

17. If a CONTINUING APPLICATION, *check appropriate box, and supply the requisite information below and in a preliminary amendment:*
[ ] Continuation [ ] Divisional [ ] Continuation-in-part (CIP) of prior application No: _____/_____
Prior application information: Examiner _____ Group / Art Unit: _____

18. CORRESPONDENCE ADDRESS

[X] Customer Number or Bar Code Label 001240 *(Insert Customer No. or Attach bar code label here)* or [ ] Correspondence address below

Name	Robert K. Rhea				
Address	5350 S. Western, Ste. 305				
City	Oklahoma City	State	OK	Zip Code	73109
Country	USA	Telephone	405-634-1915	Fax	405-634-1981

Name (Print/Type)	Robert K. Rhea	Registration No. (Attorney/Agent)	20,045
Signature	Robert K. Rhea	Date	12-20-00

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231.

PICKUP TAILGATE LOADING RAMP

CROSS REFERENCE TO RELATED APPLICATIONS

Not applicable.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

Not applicable.

BACKGROUND OF THE INVENTION

This present invention relates to loading ramps and more particularly combination pickup truck tailgate and loading ramp.

1. Field of the Invention

2. Description of the Prior Art

When loading articles of considerable mass into a pickup bed it has been common practice to lower the pickup tailgate and provide a temporary ramp, particularly if the article to be loaded is equipped with wheels such as riding lawn mowers or golf carts, in which the temporary ramp consists of lengths of lumber, such as 2 by 8 or 2 by 12, extending from the rearward edge of the pickup tailgate to the surface of the earth. Additionally, ramp ends or ramp feet which are attached to the respective ends of such temporary lumber ramps are commercially available to form a smooth transition from the surface of the earth and the upper end portion of the temporary ramp and the horizontal surface of the tailgate.

This invention is distinctive over such ramps for pickup trucks by providing one end of the ramp of this invention to

serve as a pickup tailgate and including pairs of rigidly connected track forming frames extending from the tailgate position to the surface of the earth in which these frames are hinged intermediate their ends and provided with a gravity positioned support.

BRIEF SUMMARY OF THE INVENTION

A rectangular frame having overall dimensions substantially equal with the perimeter dimensions of the standard tailgate for the pickup truck to be equipped with a loading ramp is provided with hinge and latch mounting members securing the rectangular main frame to the pickup bed for vertical movement about a horizontal axis in opening and closing the tailgate portion. Additionally two pairs of elongated rectangular frames cooperatively hinged together are rigidly connected at one end in laterally spaced relation to the top edge surface forming the rectangular main frame with the other ends of the pairs of hinged frames resting on the surface of the earth and supported at their hinged position by a gravity positioned U-shaped frame pivotally depending from the hinge position of the track forming frames. Each of the main frame and hinged rectangular frames are transversely provided with a plurality of equally spaced apart right angle cross members forming an open frame work for supporting the wheels of vehicles being moved up or down the ramp from the surface of the earth to the bed of the pickup or vice versa. When not in use as a ramp the main frame forms the tailgate of a pickup bed

and the remaining portion of the ramp is disposed upright adjacent the vertical plane of the tailgate for ease in lowering the ramp to a loading or unloading position by simply lowering the tailgate and extending the hinged frames rearwardly to the surface of the earth.

The principal object of this invention is to provide a pickup loading ramp having a tailgate portion, which remains connected with the pickup at all times and is easily moved from a pickup bed closed position to a pickup bed ramp loading or unloading position for wheel equipped vehicles.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

Figure 1 is a perspective view of the loading ramp in operative position on a pickup truck, the truck chassis being omitted for clarity;

Figure 2 is a rearward elevational view of the loading ramp when folded to pickup tailgate closed position, of the pickup cab omitted for clarity;

Figure 3 is a top plan view of the loading ramp, per se;

Figure 4 is a fragmentary vertical cross sectional view, to a different scale, taken substantially along the line 4---4 of Fig. 3;

Figure 5 is a perspective view of the loading ramp in operative position when viewed from one side;

Figure 6 is a fragmentary side elevational view of the loading ramp when folded to tailgate closed position;

Figure 7 is a top plan view of a modified ramp for load-

ing and unloading three wheel vehicles;

Figure 8 is a top plan view of loading ramp track sections forming the alternative embodiment of Fig. 7; and,

Figure 9 is an elevational view of the hinged track support.

DETAILED DESCRIPTION OF THE INVENTION

Referring first to Figs. 1 and 3, the reference numeral 10 indicates a generally rectangular frame in overall configuration lying in a common plane, forming a ramp, pivotally connected at one end with the tailgate position of a conventional pickup truck 12.

The ramp 10 includes a rectangular tailgate portion 14 having overall dimensions substantially equal with the overall dimensions of a tailgate of the pickup truck 10. The tailgate section 14 comprises a base rail 16 connected, in parallel relation, with a top rail 18 both formed from tubing material and interconnected by a pair of tubular end rails 20 and 22. A pair of hinge members 24 cooperating with the tailgate hinges, not shown, project outwardly from respective end portions of the base rail 16 at its juncture with the end rails 20 and 22, respectively. Respective end portions of the top rail support a pair of latches 26 for securing the tailgate 14 in closed position.

The ramp 10 further includes a pair of elongated ramp tracks 28 and 30 rigidly connected at one end in laterally spaced relation with the top rail 18 of the gate section 14.

Since the ramp forming tracks 28 and 30 are identical, only the track 28 is described, in detail in the interest of brevity.

The track 28 comprises a pair of U-shaped frame members 32 and 34 having leg end portions 35-36 and 38-39 respectively disposed in confronting relation and pivotally connected with one flange of a pair of right angle hinge forming members 42 and 43 for vertical pivoting movement of the U-shape member 34 toward and away from the underside of the other U-shaped member 32, as viewed in Fig. 3. The bight portion 44 of the U-shaped member 32 is rigidly secured longitudinally to one end portion of the tailgate top rail 18 in spaced relation with respect to the other track 30. The bight portion 46 of the U-shaped member 34 is normally supported by the surface of the earth 47 (Fig. 5).

A track support member 50 (Fig. 9) comprising a U-shaped member having a tubular bight portion 51 and upstanding angular metal legs 52 and 54 pivotally connected with the hinge forming members 42 and 43 between the confronting ends of the legs of the U-shaped members 32 and 34. The track support 50 is normally vertically disposed, by gravity, and contacts the surface of the earth 47 below the respective track 28 and 30 when the loading ramp 10 is disposed in loading position (Fig. 5).

The track 28 further includes a plurality of transverse cross members 56 extending between the legs of the U-shaped

members 32 and 34 in longitudinal equally spaced relation. Each of the cross members 56 comprise a length of rigid right angle metal disposed with the edges of the angular flanges directed upwardly as viewed in Fig. 4 for increased frictional resistance against the wheels of vehicles moving up or down the plane of the ramp during the loading or unloading movement. Similarly, the tailgate section 14 is provided with a plurality of longitudinally cross members 58 extending between the end rails 20 and 22 and are identical in transverse cross section with the track cross members 56. A plurality of brace members 59 extend between the tailgate bottom rail 16 and top rail 18 for rigidity.

OPERATION

In operation of the embodiment 10, assuming the factory equipped tailgate of the truck 12 has been removed, the tailgate section hinge members 24 are cooperatively received by the hinge members of the tailgate, not shown, on the pickup truck bed. The latches 26 secure the tailgate section 14 when in closed position to the pickup bed side walls. When not in use the ramp track members 28 and 30 are disposed in the position illustrated by Fig. 6 with the U-shaped members 34 depending from the hinge members 42 and 43 and the track support members 50 interposed between the U-shaped frames 32 and 34.

When it is desired to utilize the track for loading and unloading a wheeled vehicle, not shown, the tailgate latches

26 are released and the ramp 10 is pivoted downwardly and rearwardly about the horizontal axis of the tailgate hinge members 24 until the bight portion 46 of the U-shaped member 34 rests on the surface of the earth 47 and gravity disposes the track support 50 in a vertical position (Fig. 5). Thereafter a wheeled vehicle, not shown, under its own power may be driven up or down the plane formed by the loading ramp 10.

An alternative embodiment 10' is illustrated by Fig. 7 in the event it is desired to load a three wheel vehicle into the pickup bed. A temporary track 28' (Fig. 8) is interposed between the tracks 28 and 30 to supply a track for the single front or rear wheel of a three wheel vehicle in negotiating the ramp 10'. The temporary track 28' similarly comprises a U-shaped frame member 32' and a companion U-shaped frame member 34', each having their respective legs disposed in confronting relation. The bight portion 44' of the U-shaped member 32' is interposed between the tracks 28 and 30 adjacent the tailgate top rail 18. The U-shaped member 32' is maintained in interposed relation between the tracks 28 and 30 by pairs of flanges 60 and 62 secured in transverse opposition to the legs of the U-shaped member 32' and overlap the adjacent legs of the members 28 and 30. Similarly the other U-shaped member 34' is provided with pairs of rigidly connected flanges 64 and 66 similarly overlapping the legs of the adjacent tracks 28 and 30 to complete the configuration of the alternative embodiment 10'.

Obviously the invention is susceptible to changes or alterations without defeating its practicability. Therefore, I do not wish to be confined to the preferred embodiment(s) shown in the drawing(s) and described herein.

I claim:

CLAIMS

1. A pickup truck tailgate and loading ramp, comprising:

main frame means including a base rail and a top rail for occupying the position and function of a pickup tailgate; and,

elongated frame means connected at one end with said main frame means top rail for forming a loading ramp track when in tailgate lowered position.

2. The truck tailgate and loading ramp according to claim 1 in which said frame means comprises:

two pairs of longitudinally hingedly interconnected frames rigidly connected in laterally spaced relation with said main frame top rail; and,

a ramp track support hingedly depending from the hinged position of said pairs of frames.

3. The truck tailgate and loading ramp according to claim 2 and further including:

a plurality of cross members extending transversely of said main frame and said one frame in longitudinal spaced-apart relation.

4. The truck tailgate and loading ramp according to claim 1 in which said frame means comprises:

at least one pair of longitudinally hingedly interconnected frames; and,

a ramp track support hingedly depending from the hinged position of said one pair of frames.

5. The truck tailgate and loading ramp according to claim 4 and further including:

a plurality of cross members extending transversely of said main frame and said one frame in longitudinal spaced-apart relation.

6. A pickup truck tailgate and loading ramp, comprising:

main frame means including end rails connected with a base rail and a top rail for occupying the position and function of a pickup tailgate;

pairs of elongated U-shaped frame means having hingedly connected legs and rigidly connected at one end in laterally spaced relation with said main frame means top rail for forming loading ramp tracks when in tailgate lowered position; and,

a ramp track support hingedly depending from the hinged position of said pairs of frames.

7. The truck tailgate and loading ramp according to claim 6 and further including:

a plurality of cross members extending transversely of said main frame and said pairs of frames in longitudinal spaced-apart relation.

ABSTRACT OF THE DISCLOSURE

A pickup truck tailgate and loading ramp is formed by a main frame dimensioned to be hingedly received by a given pickup bed. Two pairs of hingedly interconnected frames are rigidly secured to the top rail of the tailgate section and form a pair of ramp tracks when in tailgate lowered position. When not in use the track forming frames are disposed rearwardly of the closed tailgate section.

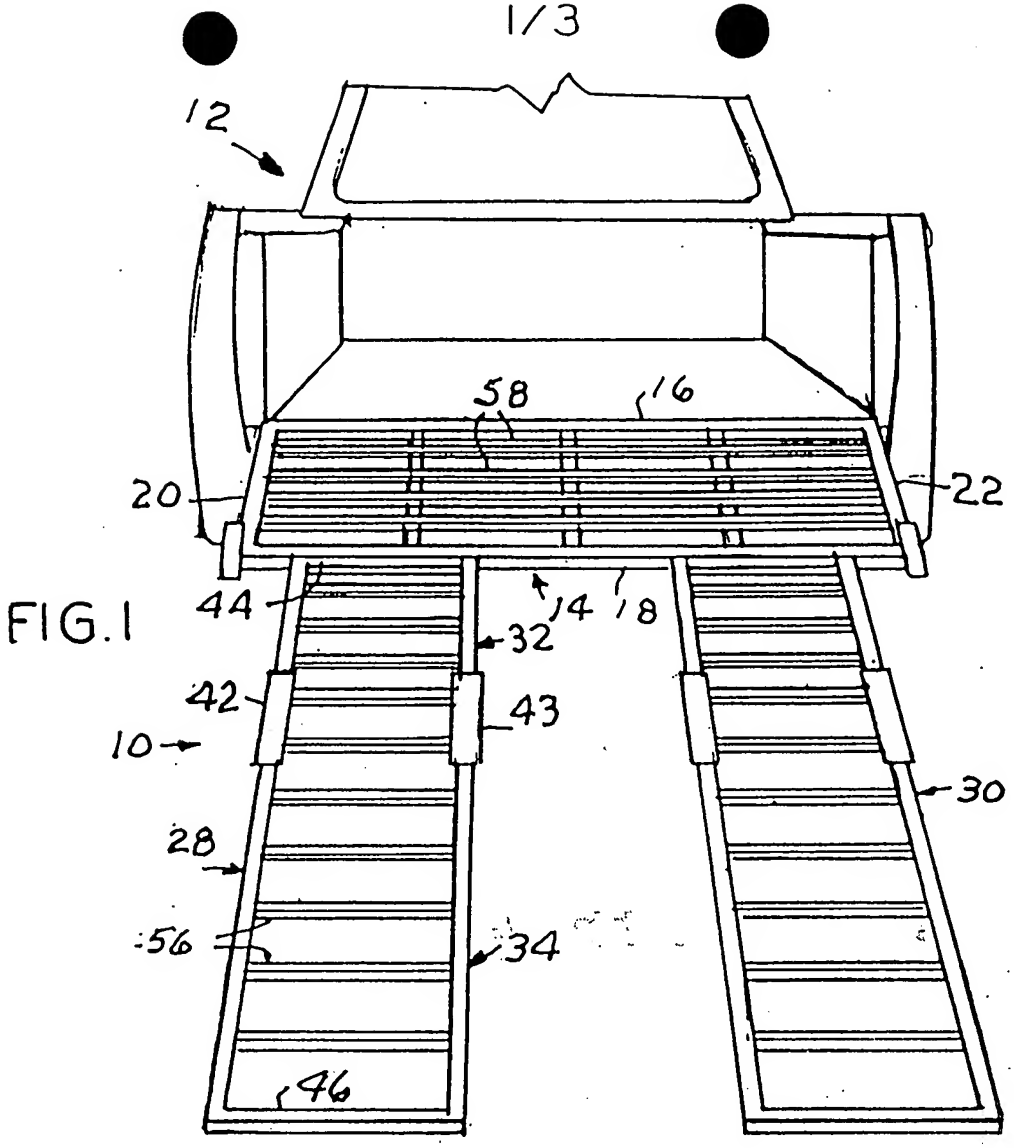
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FIG. 1

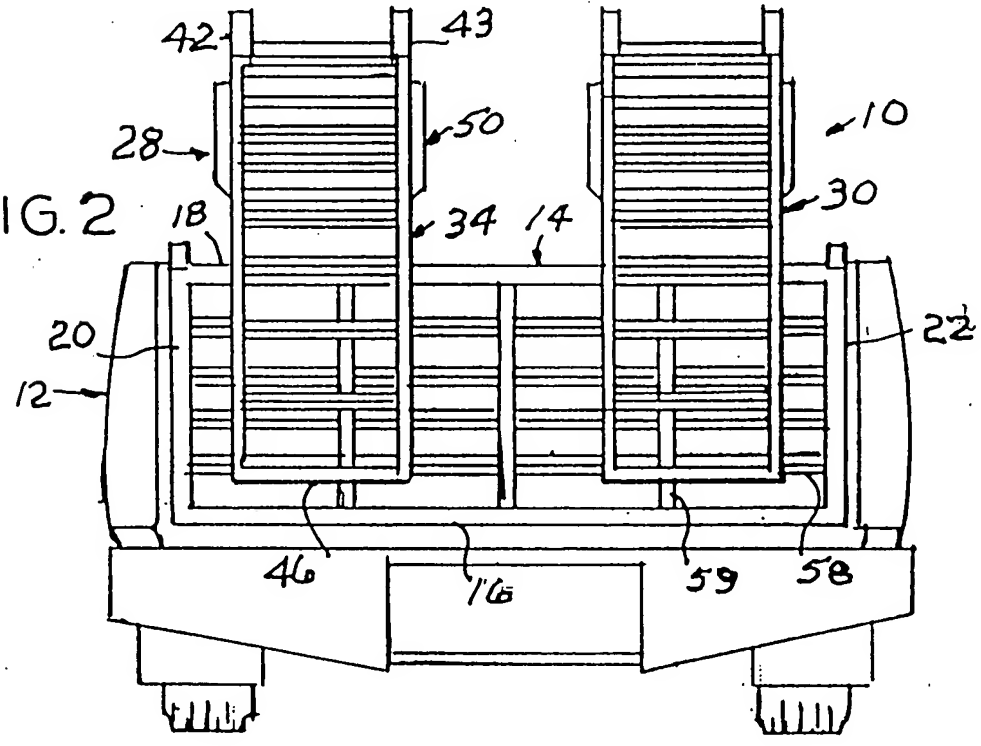
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FIG. 2

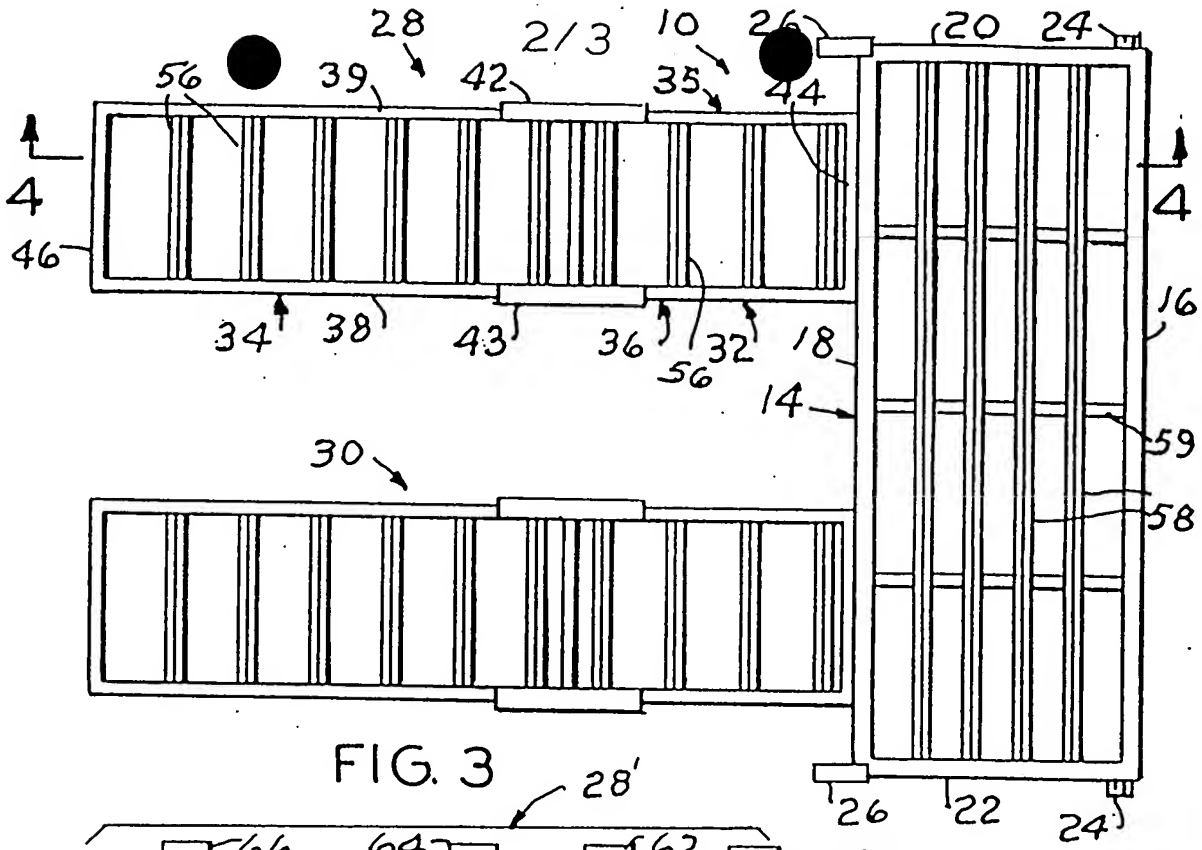


FIG. 3

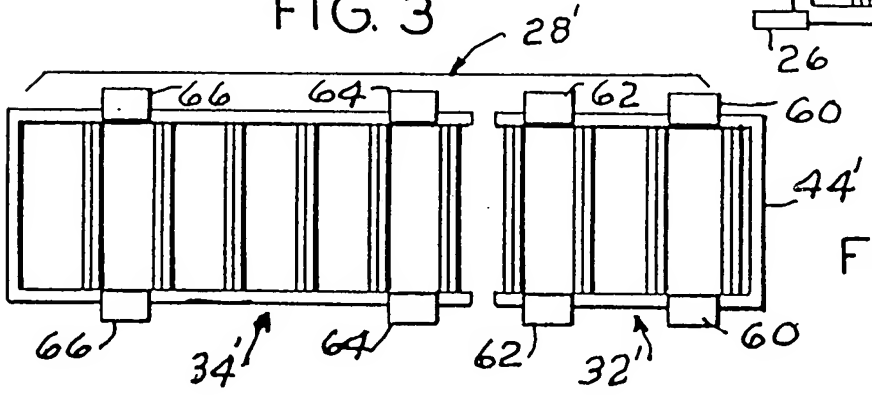


FIG. 8

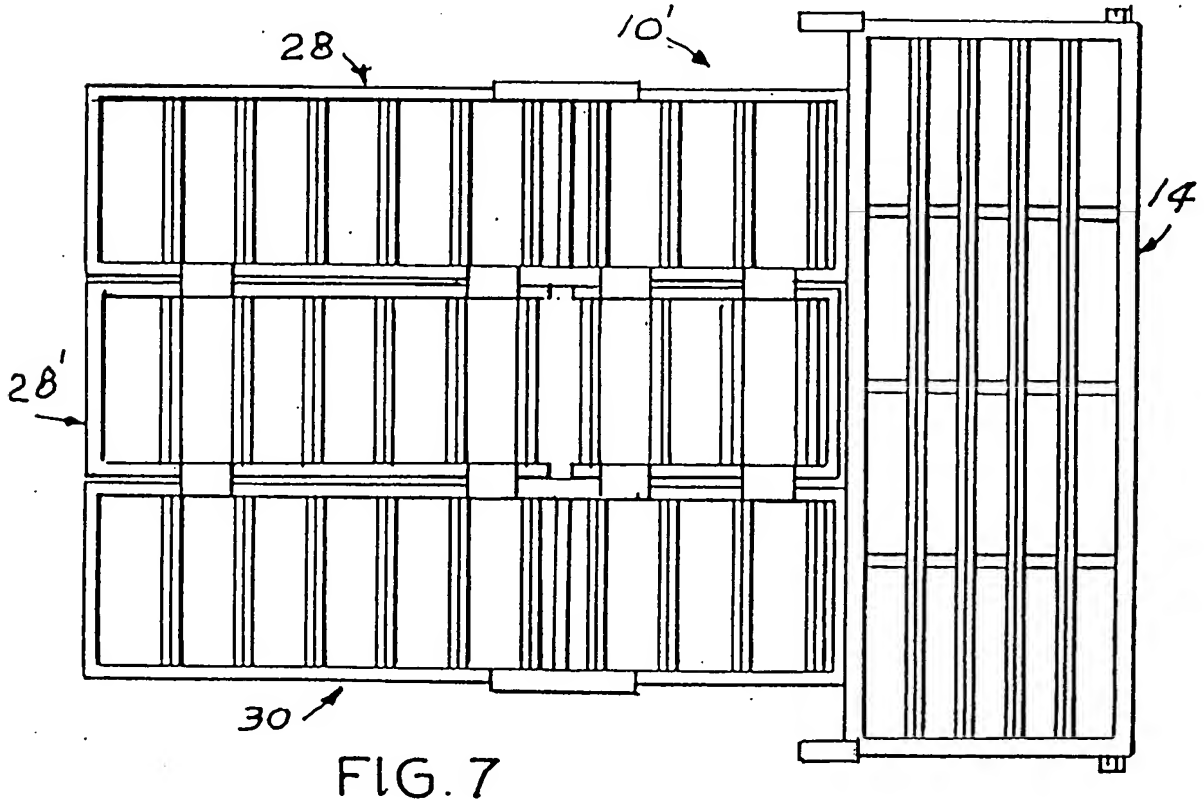
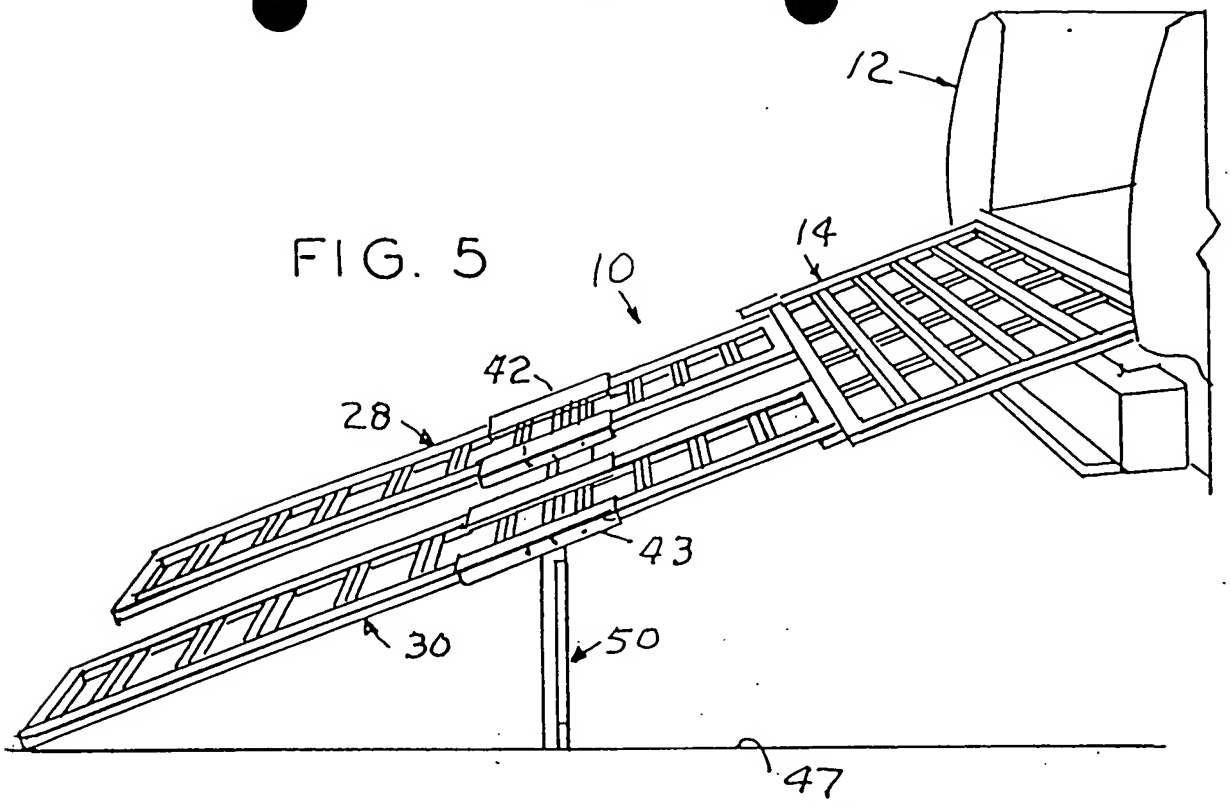


FIG. 7

FIG. 5



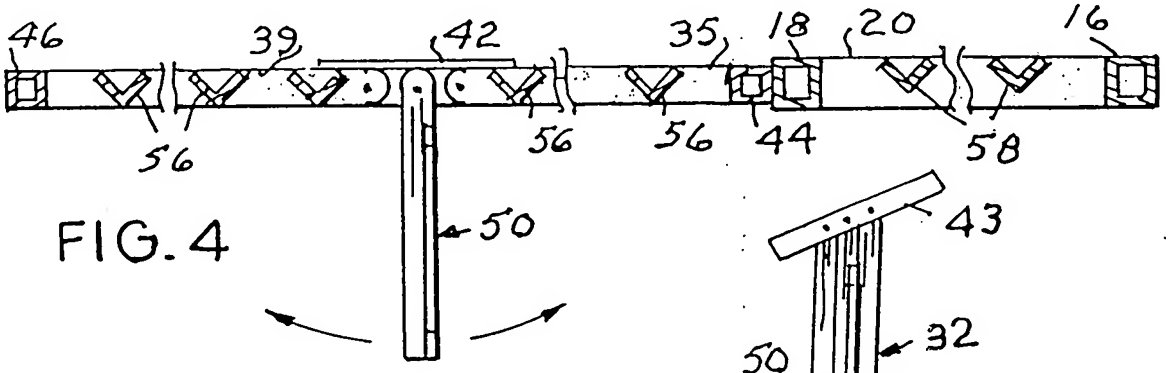


FIG. 4

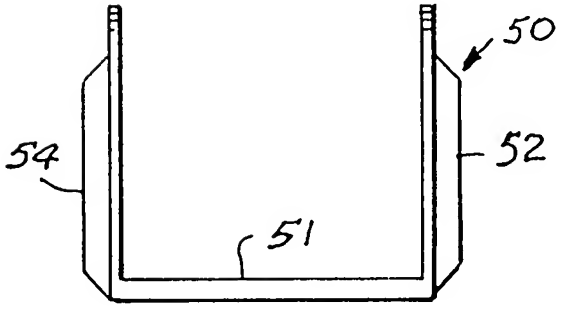


FIG. 9

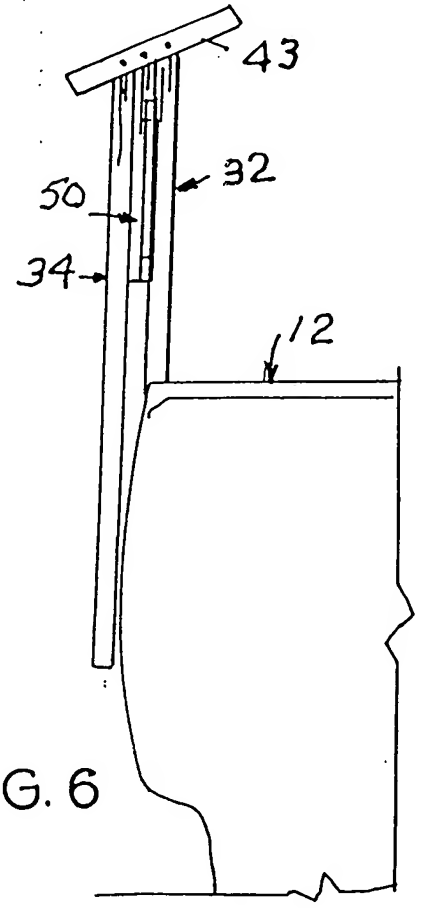


FIG. 6

EXPRESS MAIL
UNITED STATES POSTAL SERVICE

POST OFFICE TO ADDRESSEE

EL 886358148 US

ORIGIN (POSTAL USE ONLY)

PO ZIP Code: 73195	Day of Delivery: ☒ Next ☒ Second	Flat Rate Envelope: ☐	
Date In: 2 17 04	Time: 3PM ☐ 3 PM	Postage: $ 13.65	
Time In: 1147 ☐ AM ☒ PM	Delivery Attempt: ☐ 2nd Day ☐ 3rd Day	Return Receipt Fee	
Weight: 0 lbs 11.20 ozs	Int'l Alpha Country Code	COD Fee	Insurance Fee
No Delivery: ☐ Weekend ☐ Holiday	Acceptance Clerk Initials: LA	Total Postage & Fees: $ 13.65	

CUSTOMER USE ONLY

METHOD OF PAYMENT: X730222
Express Mail Corporate Acct. No.

Federal Agency Acct. No. or Postal Service Acct. No.

FROM: (PLEASE PRINT) PHONE ( )

EXCLUSIVITY-LAW INC
222 E MAIN ST
NORMAN OK 73069-1303

TO: (PLEASE PRINT) PHONE ( )

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COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

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☐ WAIVER OF SIGNATURE (Domestic Only): Additional merchandise insurance is void if waiver of signature is requested. I wish delivery to be made without obtaining signature of addressee or addressee's agent (if delivery employee judges that article can be left in secure location) and I authorize that delivery employee's signature constitutes valid proof of delivery.

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Customer Signature

Customer Copy
Label 11-F August 2000

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EMS

FO
T

42

A continuation-in-part application filing (6 pages) for a **Pickup Tailgate Loading Ramp** has been received by the USPTO. The sole inventor is **George M. Huggins**, D/N HUG107, and the documents filed include a PRELIMINARY AMENDMENT (2 pages), a substitute Specification (12 pages), Claims (2 pages), Abstract (1 page), Formal drawings (10 pages), a COMBINED DECLARATION AND POWER OF ATTORNEY (3 pages), a PETITION TO MAKE SPECIAL BECAUSE OF APPLICANT'S AGE (2 pages), Check No. 2219 in the amount of $385.00 as a filing fee, documents filed in the parent application, and this receipt verification post card. Date received and Serial Number assigned to the application are those stamped hereon.

A continuation-in-part application filing (6 pages) for a

EXCLUSIVITY-LAW, INC.
222 EAST MAIN
NORMAN, OK 73069-1303
(405) 292-1911

FIRST FIDELITY BANK, N.A.
NORMAN, OK 73069
39-269/1030

2219

2/17/2004

PAY TO THE ORDER OF Commissioner of Patents & Trademarks $ **385.00

Three Hundred Eighty-Five and 00/100********** DOLLARS

Commissioner of Patents & Trademarks

James T. Robinson
AUTHORIZED SIGNATURE

MEMO HUG107

⑈002219⑈ ⑆103002691⑆ 1046302817⑈

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Docket No. **HUG107**
Anticipated Classification of this Application:
Class: **XXX** Subclass: **XXXXXX**
S/N:
Prior Application: **09/750,498**
Examiner: **Fox, C.**
Art Unit: **3652**

Mail Stop PATENT APPLICATION
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

CONTINUATION-IN-PART APPLICATION FILING UNDER 37 CFR 1.53(b) and 1.78(a)

CERTIFICATION UNDER 37 CFR 1.10

I hereby certify that this CONTINUATION-IN-PART APPLICATION FILING and the documents referred to as enclosed therein are being deposited with the United States Postal Service on this 17th day of February, 2004, in an envelope as "Express Mail Post Office to Addressee" Mailing Label Number EL-886-358-148-US addressed to: Mail Stop PATENT APPLICATION, Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450Washington, D.C. 20231.

James T. Robinson
Name of Person Mailing Paper

Signature of Person Mailing Paper

---

1. Type of Application

This is a request for filing a continuation-in-part application, under 37 CFR 1.53(B) and 1.78(a), of a pending prior application S/N **09/750,498**, filed on December 29, 2000, for a:

PICKUP TAILGATE LOADING RAMP

I hereby verify that the attached papers are a true copy of what is shown in my records to be a part of the above-identified prior application.

The copies of the papers of the prior application which are attached are as follows:

- New Application Transmittal.
- United States Patent Application for **Pickup Tailgate Loading Ramp**, including 14 pages (8 pages specification, 2 pages claims, and 1 page Abstract) plus 3 sheets of drawings.
- Patent Application Fee Determination Record
- COMBINED DECLARATION AND POWER OF ATTORNEY.

PARTICULARS OF PRIOR APPLICATION

A. Application Serial No.: **09/750,498**

Date filed: **December 29, 2000**

B. Title as originally filed: **Pickup Tailgate Loading Ramp**

Title as last amended: **Pickup Tailgate Loading Ramp**

C. Name of applicants as originally filed and as last amended:

George M. Huggins

The current address of the inventor is as follows:

1678 Country Street 2982
Blanchard, OK 73010

A PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED UNINTENTIONALLY UNDER 37 CFR 1.137(B) was filed this date by separate mail, and copy is attached herewith.

2. **Inventorship Statement**

(a) This application discloses and claims new subject matter not disclosed in the prior application whose particulars are set out above and **the inventor in this application is the same.**

(b) The **inventorship** for all the claims in this application **is the same.**

3. **Declaration or Oath**

A COMBINED DECLARATION AND POWER OF ATTORNEY is enclosed.

4. **Identification of Claims for Prosecution**

The current application includes a new specification and a single claim. The fees to be charged are for new independent claim 1.

5. **Fee Calculation (37 CFR 1.16)**

Claims For Fee Calculation

Number filed 37 CFR 1.16(a)		Number		Extra Rate	Basic Fee
					$ 385
Total claims	1 - 3 =	0	x	$43	– 0 –
Independent Claims	1 - 20 =	0	x	$9	– 0 –
Multiple Independent Claims		0	x	$145	– 0 –
	FILING FEE TOTAL				**$ 385**

6. **Petition for Suspension of Prosecution for Time Necessary to File an Amendment**

None filed.

7. **Small Entity Statement**

Small entity status is claimed.

Reduced Filing Fee	**$ 385**

8. **Fee Payment Being Made At This Time**

Filing fee attached in the amount of:	**$ 385**
TOTAL FEE ENCLOSED	**$ 385**

9. **Method of Payment of Fees**

Check number **2219** in the amount of **$385.00** is enclosed.

10. **Authorization to Charge Additional Fees**

Not applicable.

11. **Instructions as to Overpayment**

Refund any overpayment to:

James T. Robinson
222 East Main Street
Norman, OK 73069-1303

12. **Priority**

No priority based on foreign filing is being claimed.

13. **Relate Back – 35 U.S.C. 120**

The specification, as amended by PRELIMINARY AMENDMENT filed herewith, includes, before the first line, the sentence:

"This is a continuation-in-part of co-pending application Serial No. 09/750,498 filed on December 29, 2000."

14. **Assignment**

None.

15. **Power Of Attorney**

The power of attorney in the prior application is to:

James T. Robinson
Registration No. 33,548

Send correspondence to:

James T. Robinson
222 East Main Street
Norman, OK 73069-1303

Direct telephone calls to:

James T. Robinson
(405) 292-1911

A COMBINED DECLARATION AND POWER OF ATTORNEY is enclosed.

16. **Maintenance of Co-pendency of Prior Application**

The parent application was unintentionally abandoned. A PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED UNINTENTIONALLY UNDER 37 CFR 1.137(B) is being filed simultaneously herewith.

17. **Conditional Petitions for Extension of Time in Prior Applications**

None.

18. Abandonment of Prior Application

Do **NOT** abandon the parent application.

19. Information Disclosure Statement

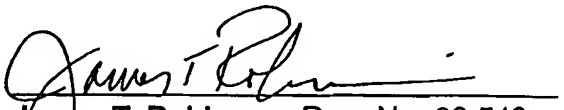
INFORMATION DISCLOSURE STATEMENT is NOT submitted herewith.

20. Other Papers Enclosed

- PRELIMINARY AMENDMENT (**2** pages) is enclosed.
- Substitute specification (**12** pages) is enclosed.
- A new page of Claims (**2** pages containing **1** independent claim) is enclosed.
- A new Abstract (**1** page) is enclosed.
- **10** sheets of ***formal*** drawings are enclosed.
- A copy of the PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED UNINTENTIONALLY UNDER 37 CFR 1.137(B), filed this date, is attached.
- A receipt verification post card is enclosed.
- A PETITION TO MAKE SPECIAL BECAUSE OF APPLICANT'S AGE is enclosed.

21. ATTORNEY'S DECLARATION

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application of any parent issuing thereon.



James T. Robinson, Reg. No. 33,548
222 East Main Street
Norman, OK 73069-1303
Telephone (405) 292-1911
Facsimile (405) 321-1104

ATTORNEY FOR APPLICANT

Pickup Tailgate Loading Ramp

George M. Huggins, Inventor

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] **This is a continuation-in-part of co-pending application Serial No. 09/750,498 filed on December 29, 2000.** This invention relates to a pickup tailgate loading ramp, and more particularly, but not by way of limitation, to a loading ramp for use in conjunction with a pickup truck, wherein the tailgate ramp of the present invention replaces the normal pickup truck tailgate. The tailgate ramp includes hinge assemblies and latching assemblies which cooperate with existing tailgate hardware to secure the tailgate ramp to the pickup truck. The terms pickup tailgate loading ramp and tailgate ramp, as used herein, refer to applicant's invention.

2. Discussion

[0002] Pickup trucks are well known, and their popularity continues to grow. They are used to carry a variety of cargo, including outdoor power equipment such as lawnmowers, garden tractors, all terrain vehicles, and golf carts. It is difficult, if not impossible, to load a riding lawnmower or an all terrain vehicle into the bed of a pickup truck when the truck is equipped with original equipment tailgate (sometimes also referred to as an endgate).

[0003] While ramps that also serve as tailgates are known for use on pickup trucks, the currently existing products have various disadvantages. Different pickup truck manufacturers use different latch mechanisms and different hinge assemblies for tailgates of different widths. Tailgate ramps were largely custom built for each model of each pickup truck in order to properly locate the locking mechanism at a proper height.

[0004] Moreover, most convertible endgates were relatively heavy, difficult to attach or remove, and difficult to deploy in a load position. Many of the latch mechanisms for tailgate ramps were difficult to operate.

[0005] Although pickup tailgate ramps are known in the art, until now no tailgate ramp has been suited both for supporting substantial loads such as all terrain vehicles, garden tractors, golf carts, and other recreational devices and also for easy installation and removal.

SUMMARY OF THE INVENTION

[0006] Applicant's invention provides a combination tailgate and loading ramp for pickup trucks. A rectangular tailgate section is rigidly attached to an upper ramp section, hose lower end is pivotally attached to a linkage member. A support member and a lower ramp section are also attached to the linkage member to form a strong but lightweight ramp from the road surface to the bed of the pickup truck.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] Figure 1 shows the pickup tailgate loading ramp according to the present wherein the tailgate ramp is deployed in a vertical (i.e., stored) position.

[0008] Figure 2 shows the pickup tailgate loading ramp shown in Figure 1 wherein the tailgate ramp is deployed in a load position.

[0009] Figure 3 is an enlarged detailed view of the pickup tailgate loading ramp shown in Figures 1 and 2.

[0010] Figure 4 is a view of the tailgate ramp of Figures 1-3 wherein the left folding ramp assembly and the right folding ramp assembly are exploded upwardly away from the tailgate assembly.

[0011] Figure 5 is a top plan view of the tailgate ramp of Figures 1-3.

[0012] Figure 6 is a rear plan view of the tailgate ramp of Figures 1-3 from behind the pickup truck.

[0013] Figure 7 is a bottom plan view of the tailgate ramp of Figures 1-3.

[0014] Figure 8 is a left plan view of the left folding ramp assembly.

[0015] Figure 9 is a right plan view of the right folding ramp assembly.

[0016] Figure 10 is a front plan view of the tailgate ramp of Figures 1-3.

[0017] Figure 11 is an exploded view of the left folding ramp assembly and the right folding ramp assembly.

[0018] Figure 12 is a closeup view of the right latch assembly of the tailgate ramp shown in Figures 1-3.

[0019] Figure 13 is an exploded view of the right latch assembly shown in Figure 12.

[0020] Figure 14 is an exploded view of the tailgate assembly, the left latch assembly, the right latch assembly, the left hinge assembly, and the right hinge assembly, all as shown in Figures 1-3, together with alternate latch assemblies and alternate hinge assemblies according to the present invention.

[0021] Figure 15 shows still another latch assembly according to the present invention.

[0022] Figure 16 is an enlarged view of the latch assembly of Figure 15 with a portion of the tailgate assembly cut away.

[0023] Figure 17 illustrates the movement of the tailgate ramp of Figures 1-3 from the vertical (i.e., stored) position shown in Figure 1 to the load position shown in Figure 2.

DETAILED DESCRIPTION OF THE INVENTION

[0024] In the following description of the invention, like numerals and characters designate like elements throughout the figures of the drawings.

[0025] Referring now to the drawings generally and to Figure 1 in particular, a pickup tailgate loading ramp 50 in accordance with the present invention is mounted on the pickup truck T resting on a road surface S using existing tailgate hardware (not shown). The tailgate ramp 50 includes a tailgate assembly 52, a left folding ramp assembly 54, a right folding ramp assembly 56, a left latch assembly 58, a right latch assembly 60, a left hinge assembly 62, and a right hinge assembly 64. The tailgate ramp 50 of Figure 1 is shown in the vertical (i.e., storage) position.

[0026] Referring now to Figure 2, the tailgate loading ramp 50 is deployed in a load position so that the left folding ramp assembly 54 and the right folding ramp assembly 56 cooperate with the tailgate assembly 52 to create a continuous path from the surface S to the bed B of the pickup truck T. U-shaped support members 70 are attached to the left folding ramp assembly 54 and the right folding ramp assembly 56 (*see* Figure 3 and Figure 17).

[0027] Referring now to Figure 3, the tailgate loading ramp 50 is shown detached from the pickup truck T. The tailgate assembly 52 includes a horizontal rail 80 and a parallel horizontal rail 82 interconnected by left end rail 84 and right end rail 86, having lower end portions 88, 90, respectively. The left latch assembly 58 is attached to the left end rail 84 and the right latch assembly 60 is attached to the right end rail 86. The left latch assembly 58 and the right latch assembly 60 engage existing tailgate latching pins P (*see* Figure 2, only one shown) to secure the tailgate loading ramp 50 in the vertical position.

[0028] Still referring to Figure 3, the left hinge assembly 62 is attached to the horizontal rail 80 adjacent the lower end portion 88 of the left end rail 84. The right hinge assembly 64 is attached to the horizontal rail 80 adjacent the lower end portion 90 of the right end rail 86. The left and right hinge assemblies, 62, 64, pivotally engage hinge pins P (now shown), standard tailgate attachment hardware located adjacent the bed B of the pickup truck T.

[0029] Still referring to Figure 3, the left folding ramp assembly 54 includes an upper ramp section 92 attached at one end to a left end portion 94 of the parallel horizontal rail 82 (*see* Figures 4, 6, 10, and 14). The right folding ramp assembly 56 includes an upper

ramp section 96 attached at one end to a right end portion 98 of the parallel horizontal rail 82 (*see* Figures 4, 6, 10, and 14). As used with respect to the folding ramp assemblies 54, 56, the term upper is used to indicate the structure so described is higher in elevation (and nearer the bed B of the pickup truck T) when the tailgate loading ramp 50 is deployed in the load position. Similarly, the term lower is used to indicate the structure so described is lower in elevation (and nearer the surface S on which the pickup truck T rests) when the tailgate loading ramp 50 is deployed in the load position.

[0030] Still referring to Figure 3, the other end of each of the upper ramp sections 92, 96 is pivotally attached to a pair of linkages 100. Each linkage 100 has an upper portion 102, an intermediate portion 104, and a lower portion 106. Each of the upper ramp sections 92, 96 has an upper portion 108 and a lower portion 110. The ends of the upper ramp sections 92, 96 adjacent the upper portions 108 of the upper ramp sections 92, 96 are rigidly connected to the parallel horizontal rail 82. The other ends of the upper ramp sections 92, 96, adjacent the lower portions 110 of the upper ramp sections 92, 96, are pivotally attached to the linkages 100 adjacent the upper portion of linkage 102.

[0031] Still referring to Figure 3, the ends of each of the U-shaped support members 70 are pivotally attached to the linkages 100 in the intermediate portion 104 of the linkages 100 by fasteners 118.

[0032] Still referring to Figure 3, each folding ramp section 54, 56 includes a lower ramp section 112 having an upper end 114 and a lower end 116. The upper end 114 of each lower ramp section 112 is attached to two linkages 100 adjacent the lower portions

of linkage 106 of the linkages 100. The lower end 116 of each lower ramp section 112 rests on the surface S when the tailgate ramp 50 is deployed in the load position.

[0033] Referring now to Figures 4-10, the left upper ramp section 92 and the right upper ramp section 96 are exploded upwardly from the parallel horizontal rail 82. Projections 120 extending from the upper end portions108 of the upper ramp sections 54, 56 are received through holes 122 in the parallel horizontal rail 82 and disposed within hollow frame members 124 of the tailgate assembly 52. When the projections 120 are disposed within the hollow frame members 124, horizontal bores 126 in the projections 120 mate with throughways 128 in the hollow frame members 124. Pins 130 secure the upper ramp sections 92, 96 to the tailgate assembly 52. Each fastener 130 extends through a throughway 128 and through the horizontal bore 126 in the projection 120.

[0034] Still referring to Figures 4-10, holders 132 secure lower ramp sections 112 to the upper ramp sections 92, 96 when the tailgate ramp 50 is in the vertical (i.e., stored) position (*see* Figures 8 and 9).

[0035] Still referring to Figures 4-10, the left hinge assembly 62 includes a hollow cylindrical member 134 which receives a left hinge pin attached to the left side of the pickup truck T adjacent the bed B. The right hinge assembly 64 includes a partially cutaway cylindrical member 136 which mates with a mating right hinge pin attached to the right side of the pickup truck T adjacent the bed B.

[0036] The hinge pin assemblies 62, 64 according to the present invention match the factory equipment on the pickup truck T. It will be understood by one skilled in the art that a variety of mating configurations are known in the art. Applicant's invention is adaptable

for use with any mating configuration which permits a tailgate to be easily removed and installed.

[0037] Referring now to Figures 8 and 9, an arrow A shows the direction of movement, in concert, of the left upper ramp portion 92 and the right upper ramp portion 96 as to raise the holder 132 which secures the

[0038] Referring now to Figure 11, the folding ramp assemblies of the present invention are shown in exploded view. Each linkage 100 has a bore 140 located adjacent the upper portion 102 of the linkage 100, a bore 142 located in the intermediate portion 104 of the linkage 100, and a bore 144 located adjacent the lower portion 106 of the linkage 100. The upper ramp section 92 is attached to two linkages 100 by means of fasteners 118 disposed through the bores 140 of two linkages 100 and through bores 150 located adjacent the upper portion 108 of the upper ramp section 92. Likewise the upper ramp section 96 is attached to two linkages 100 by fasteners 118 disposed through the bores 140 of the two linkages 100 and through bores 150 located adjacent the upper portion 108 of the upper ramp section 96.

[0039] Each of the U-shaped support members 70 is attached to two linkages 100 by fasteners 118 disposed through the bores 142 located in the intermediate portions 104 of the two linkages 100 and through bores 152 adjacent the ends of the U-shaped support members 70.

[0040] Each of the lower ramp sections 112 is attached to two linkages 100 by fasteners 118 disposed through the bores 144 located adjacent the lower portion of the

linkages 100 and through bores 154 adjacent the upper ends 114 of the lower ramp sections 112.

[0041] Referring now to Figures 12 and 13, the right latch assembly 60 according to the present invention is attached to the right end rail 86 of the tailgate assembly 52. A spring-biased latching arm 170 is attached to a latch support 172 attached to the right end rail 86 of the tailgate assembly 52 by latch support mounting security bolts 174. The spring-biased latching arm 170 rocks on a pivot bolt 176 which extends through a biasing spring 178 and through a bore 180 in the latching arm 170, and through a bore 182 in the latch support 172. One end 184 of the latching arm 170 includes a cutout 186 which engages the tailgate latching pin P provided as standard equipment on the pickup truck T (*see* Figure 2). The other end 188 of the latching arm 170 includes a bore 190 which mates with a bore 192 in a tab portion 194 of the latch support 172 when the tailgate ramp 50 according to the present invention is in the vertical (i.e., storage) position. The latch support 172 is mounted at a convenient location along arrow B on the right end rail 86 of the tailgate assembly 52.

[0042] Referring now to Figure 14, the left hinge assembly 62 consists of a hollow cylindrical member 134 disposed within a first tubular member 200 attached to the horizontal rail 80 of the tailgate assembly 52. The cylindrical member 134 has a transverse bore 202 which mates with a transverse bore 204 in the tubular member 200. A fastener 206 extends through the cylindrical member transverse bore 202 and the mating tubular member transverse bore 204 and thereby secures the hollow cylindrical member 134 within the tubular member 200.

[0043] Still referring to Figure 14, the right latch assembly 64 consists of a partially cutaway hollow cylindrical member 136 secured in a second tubular member 208 attached to the horizontal rail 80 distal from the tubular member 200.

[0044] Still referring to Figure 14, a hollow cylindrical member 234 having a length less than the length of the hollow cylindrical member 134 and a partially cutaway hollow cylindrical member 236 having a length less than the length of the partially cutaway hollow cylindrical member 136 permits the tailgate assembly 52 to be adapted for use in a pickup truck having a narrower tailgate width.

[0045] Ford, General Motors, and Daimler-Chrysler pickup trucks for model years 1999 through 2004 have similar tailgate latching mechanisms and similar hinge assemblies, but the position of the latching pin P and the width of the tailgate vary between the three manufacturers. It will be understood by one skilled in the art that the latch assembly 58, 60 and the hinge assembly 62, 64 of the present invention permit the adaptation of a single tailgate assembly 52 to any of the three manufacturers.

[0046] Still referring to Figure 14, another latch support 272 includes a tab 292 having a bore 294 wherein the tab 292 is located near the bottom of the latch support 272. The latch support 272 facilitates the adaptation of the tailgate ramp 50 to a changed location of the latch pin P without drilling additional holes in the end rail 86 of the tailgate assembly 52.

[0047] Still referring to Figure 14, another latch assembly 360 permits use of the tailgate assembly 52 of the present invention with Ford, General Motors, and Daimler-Chrysler pickup trucks for model years prior to 1999. A latch support 370 containing a

spring-loaded latch pin 372 is mounted on the rail 86 of the tailgate assembly 52. A spring 374 biases the latch pin 372 in a distended position to engage a standard latch pin receiver in the pickup truck. A thumb lever 376 permits temporary disengagement of the latch pin 372 from the latch pin receiver for deployment of the tailgate ramp 50 in the load position. A backstop 378 is secured to the latch support 370 by fasteners 380 to limit travel of the latch pin 372 in the biased direction.

[0048] Referring now to Figures 15 and 16, shown therein is another latch assembly 400 for use according to the present tailgate ramp invention in Ford, General Motors, and Daimler-Chrysler pickup trucks for model years prior to 1999. A spring-loaded pull plunger 402 is housed in a cylindrical barrel 404. A spring 406 biases the plunger 402 in an extended position so the plunger 402 is disposed within the standard-equipment pickup truck latch pin receiver. A finger loop 408 permits manual withdrawal of the plunger 402 from the latch pin receiver.

[0049] Referring now to Figure 17, a left plan view of the tailgate ramp according to the present invention shows the operation of applicant's invention. Movement of the lower ramp section 112 along arrow A permits disengagement of the holder 132 from the upper ramp section 92. As the lower ramp section 112 is pulled outwardly and downward, the U-shaped support member 50, the upper ramp section 92, and the lower ramp section 112 pivot at their points of attachment to the linkage 100 so that, when fully extended, the tailgate ramp 50 of the present invention provides a ramp from the road surface S to the bed B of the pickup truck T. The U-shaped support member 70 provides support for both

the upper ramp section 92 and the lower ramp section 112 by virtue of their common connection to different points of attachment on the linkage 100.

[0050] The foregoing descriptions of specific embodiments of the present invention have been presented for purposes of illustration and description. They are not intended to be exhaustive or to limit the invention to the precise forms disclosed, and obviously many modifications and variations are possible in light of the above teaching. The embodiments were chosen and described in order to best explain the principles of the invention and its practical application, to thereby enable others skilled in the art to best utilize the invention and various embodiments with various modifications as are suited to the particular use contemplated. It is intended that the scope of the invention be defined by the claims appended hereto and their equivalents.

CLAIMS

I claim:

1. A pickup tailgate loading ramp for replacement of a standard pickup tailgate attached to the pickup by standard-equipment tailgate hardware, wherein said pickup tailgate loading ramp is adjustable between a vertical position when said pickup tailgate loading ramp is not being used for loading and a load position for moving materials and equipment from the road surface into the bed of the pickup truck, wherein the standard-equipment pickup tailgate hardware includes two latch pins and two hinge pins, said pickup tailgate loading ramp comprising:

a generally rectangular tailgate assembly having a first horizontal rail, an opposed second horizontal rail, and first and second end rails;

first and second hinge assemblies, wherein said first and second hinge assemblies are attached to said first horizontal rail and hingedly connect said first horizontal rail to said hinge pins;

first and second latch assemblies, wherein said first latch assembly is attached to said first end rail and said second latch assembly is attached to said second end rail, so that, when said pickup tailgate loading ramp is in the vertical position said first and second latch assemblies engage the standard-equipment latch pins and secure said pickup tailgate loading ramp to the pickup truck;

at least one folding ramp assembly, said folding ramp assembly further comprising:

an upper ramp section having an upper end and a lower end, said upper end of said upper ramp section being rigidly attached to said opposed horizontal rail of said tailgate section ;

a lower ramp section having an upper end and a lower end;

a U-shaped support member; and

a linkage member, said linkage member being characterized as having an upper portion, an intermediate portion, and a lower portion, said upper ramp section being pivotally attached to said upper portion of said linkage member, said support member being attached to said intermediate portion of said linkage member, and said lower ramp section being pivotally attached to said lower portion of said linkage member;

so that, as said tailgate assembly is rotated on said first and second hinge assemblies, said upper ramp section and said lower ramp section are extended outwardly and down from the pickup truck until said lower end of said lower ramp section is in contact with the road surface and a ramp is formed for moving materials from the road surface to the bed of the pickup truck.

ABSTRACT

A tailgate and loading ramp for pickup trucks includes a rectangular tailgate section rigidly attached to an upper ramp section. The lower end of the upper ramp section is pivotally attached to a linkage member. A support member and a lower ramp section are also attached to the linkage member to form a strong but lightweight ramp from the road surface to the bed of the pickup truck.

FIG. 1

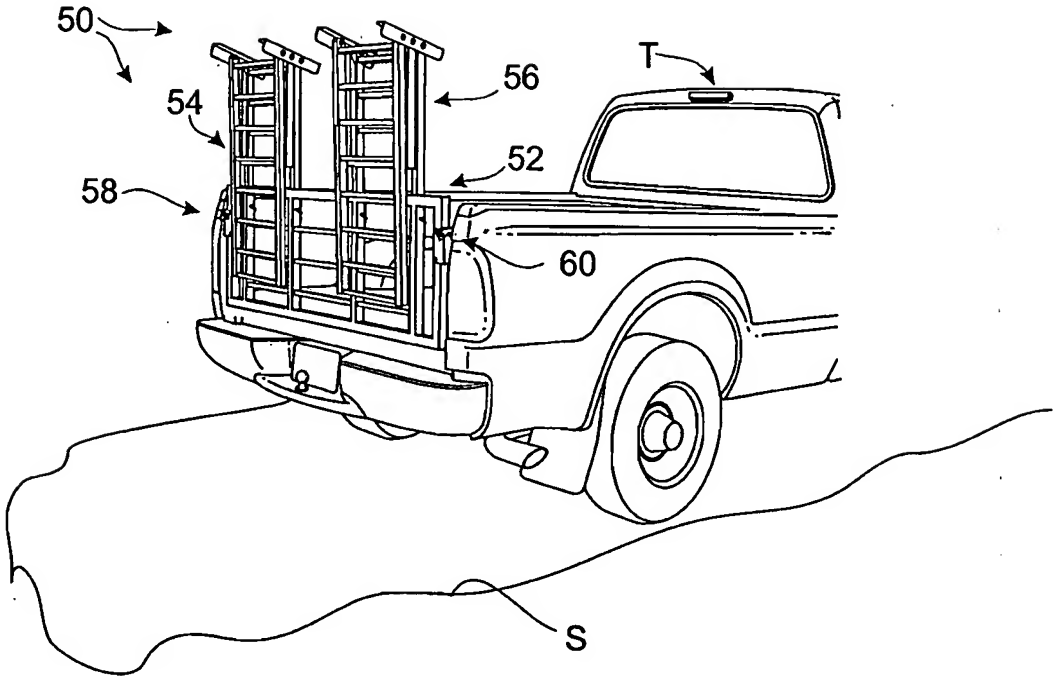


FIG. 2

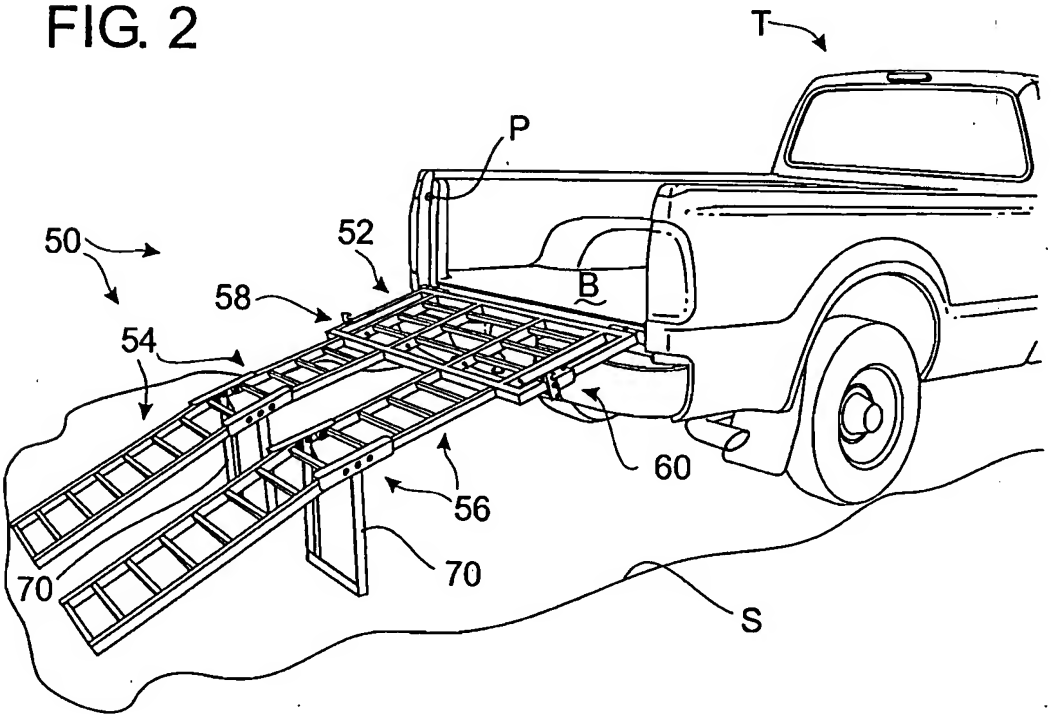


FIG. 3

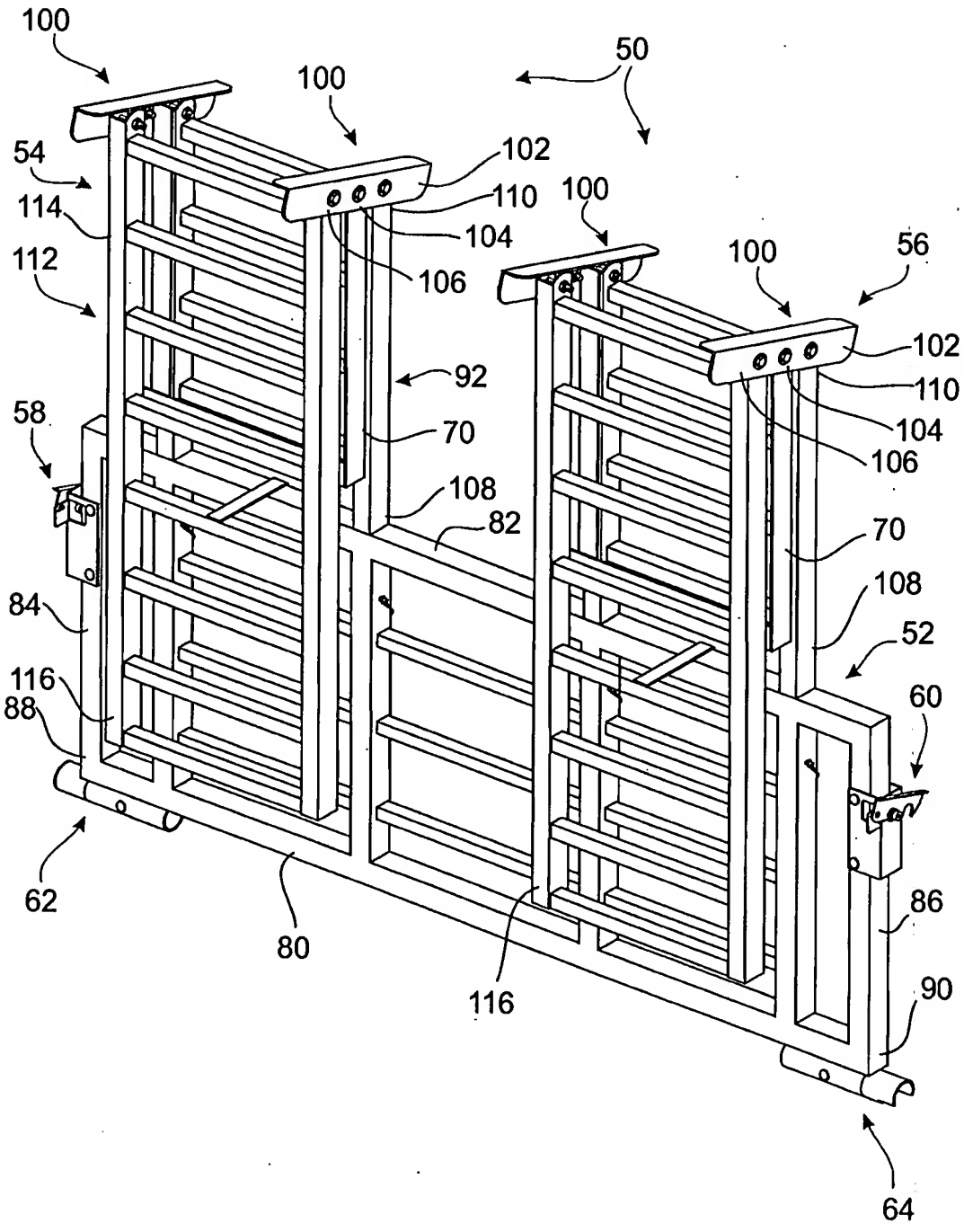

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FIG. 4

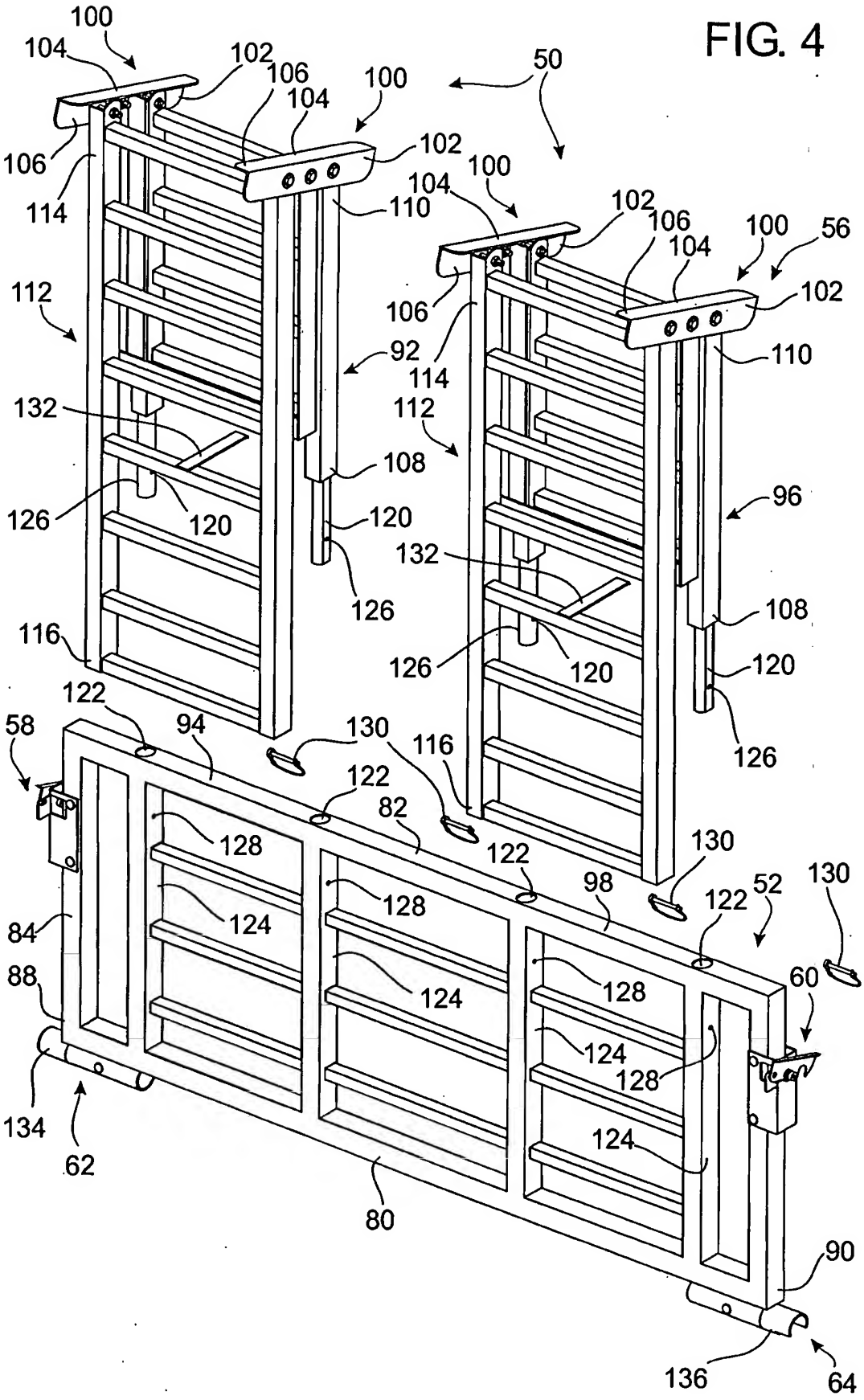
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FIG. 5

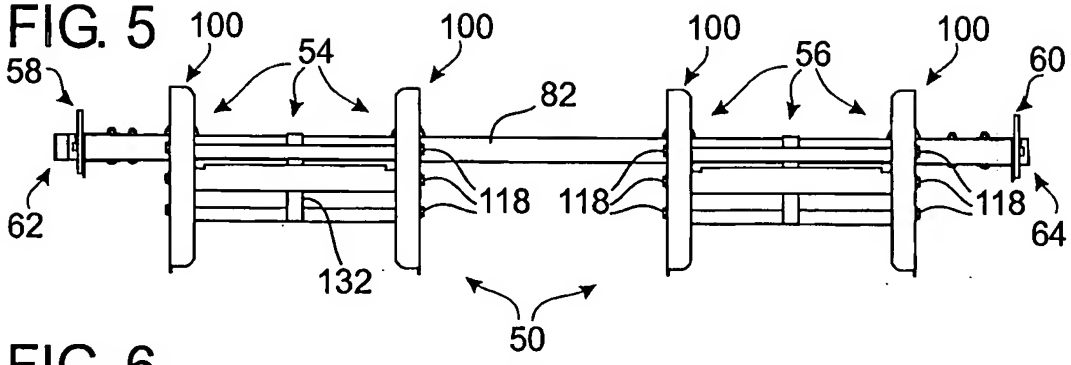


FIG. 6

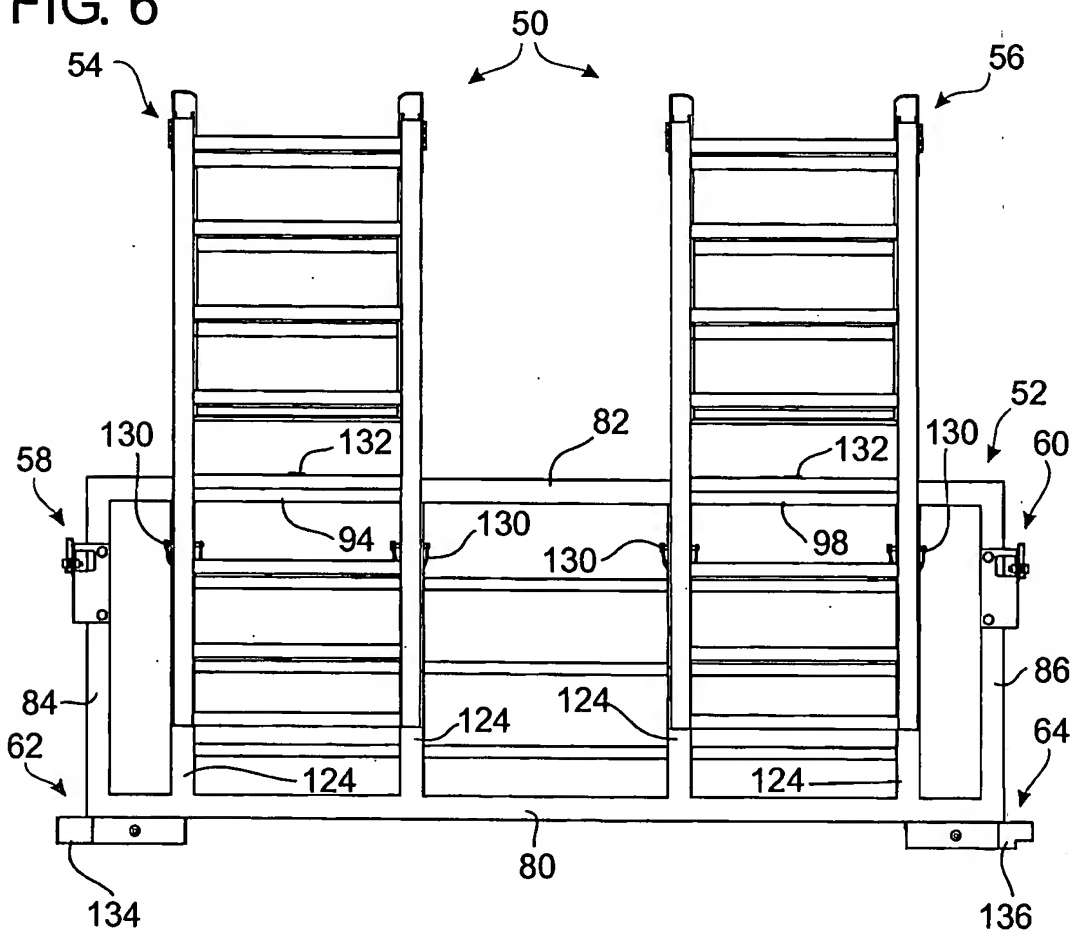


FIG. 7

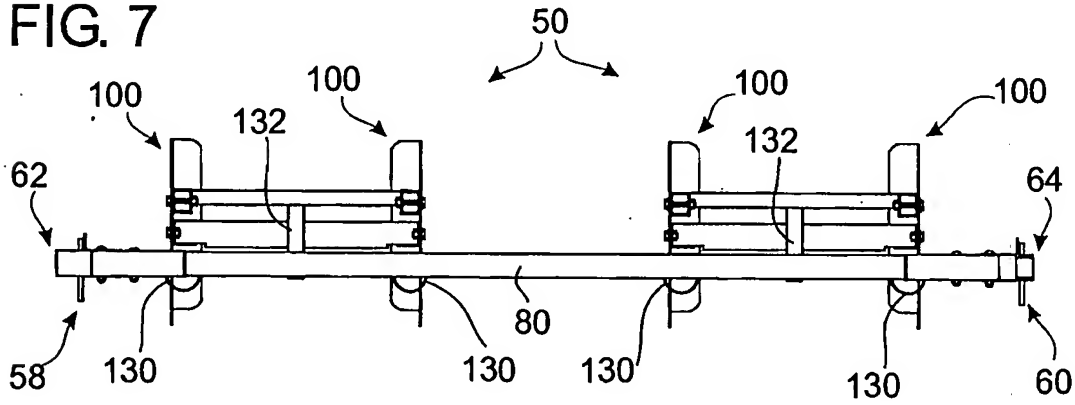


FIG. 8

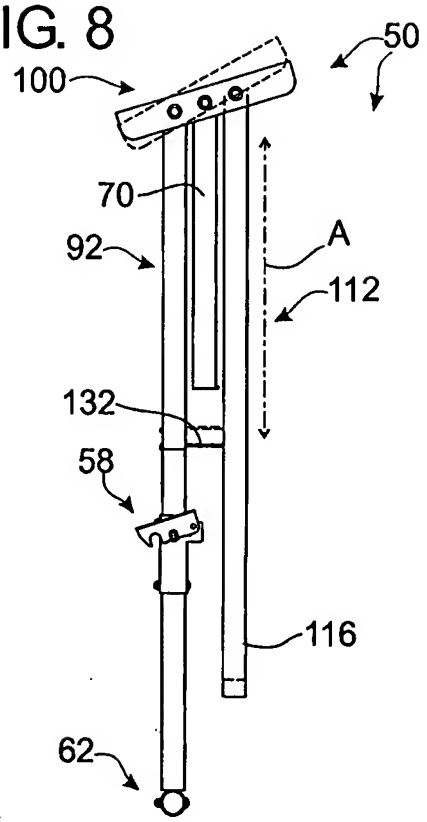


FIG. 9

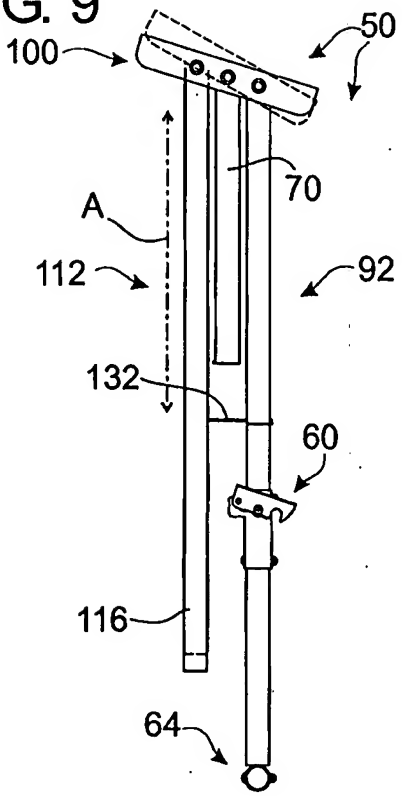
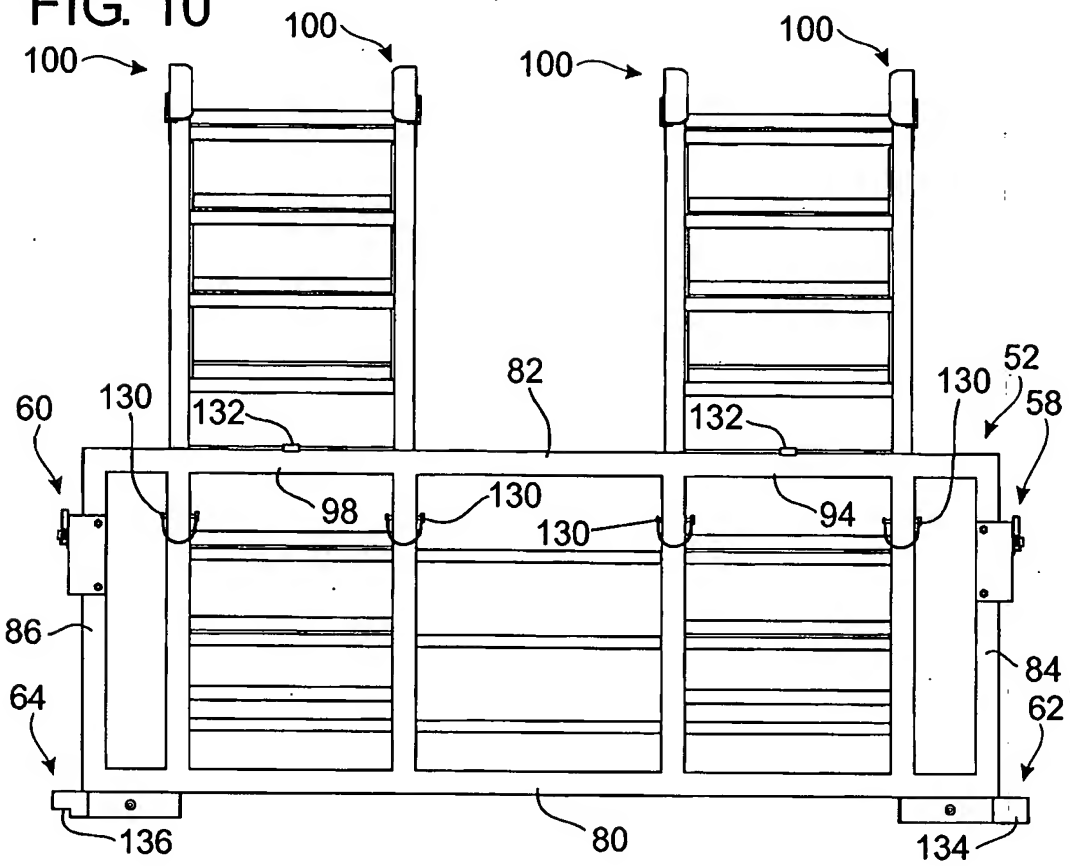


FIG. 10



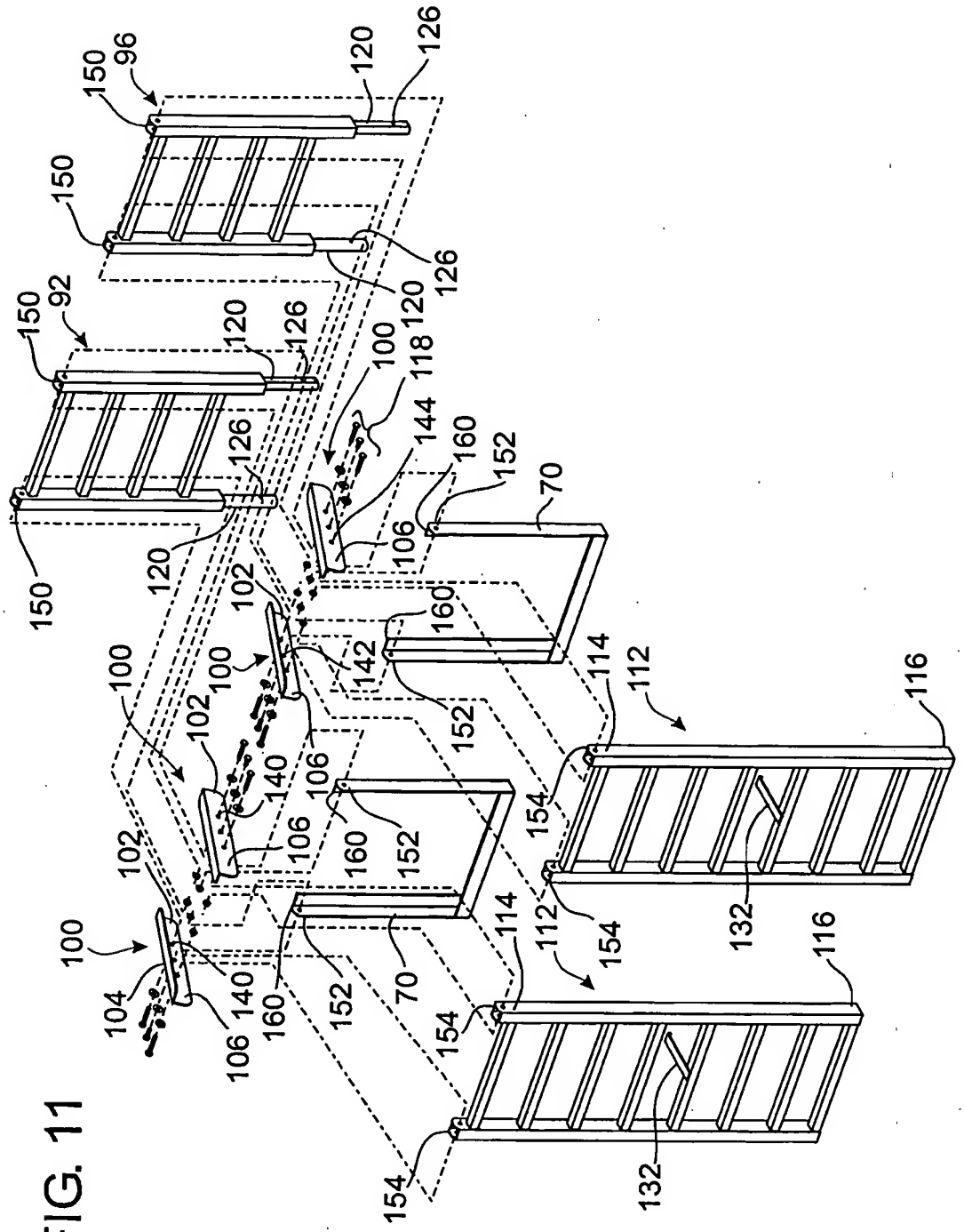

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FIG. 11

FIG. 12

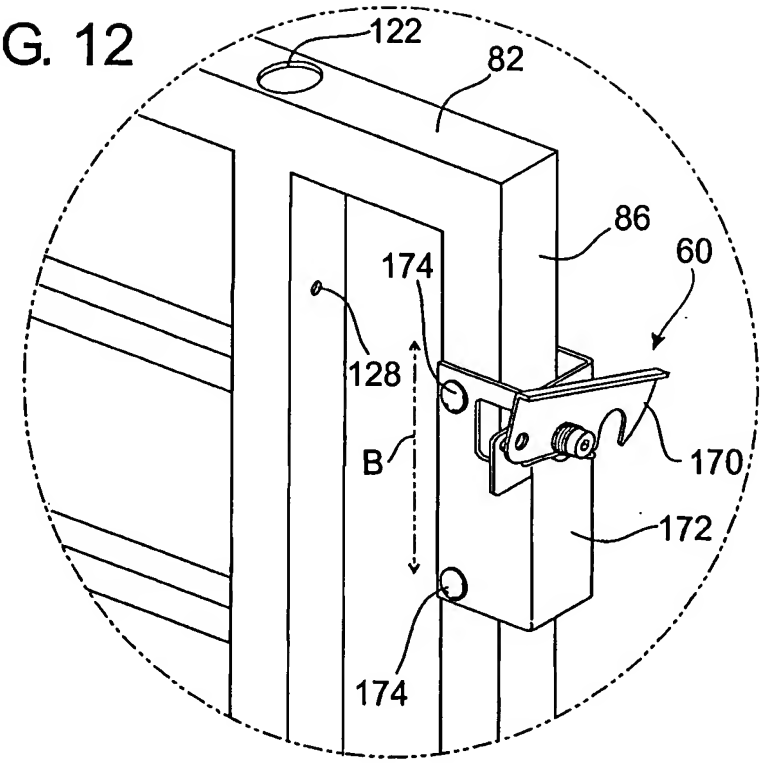
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FIG. 13

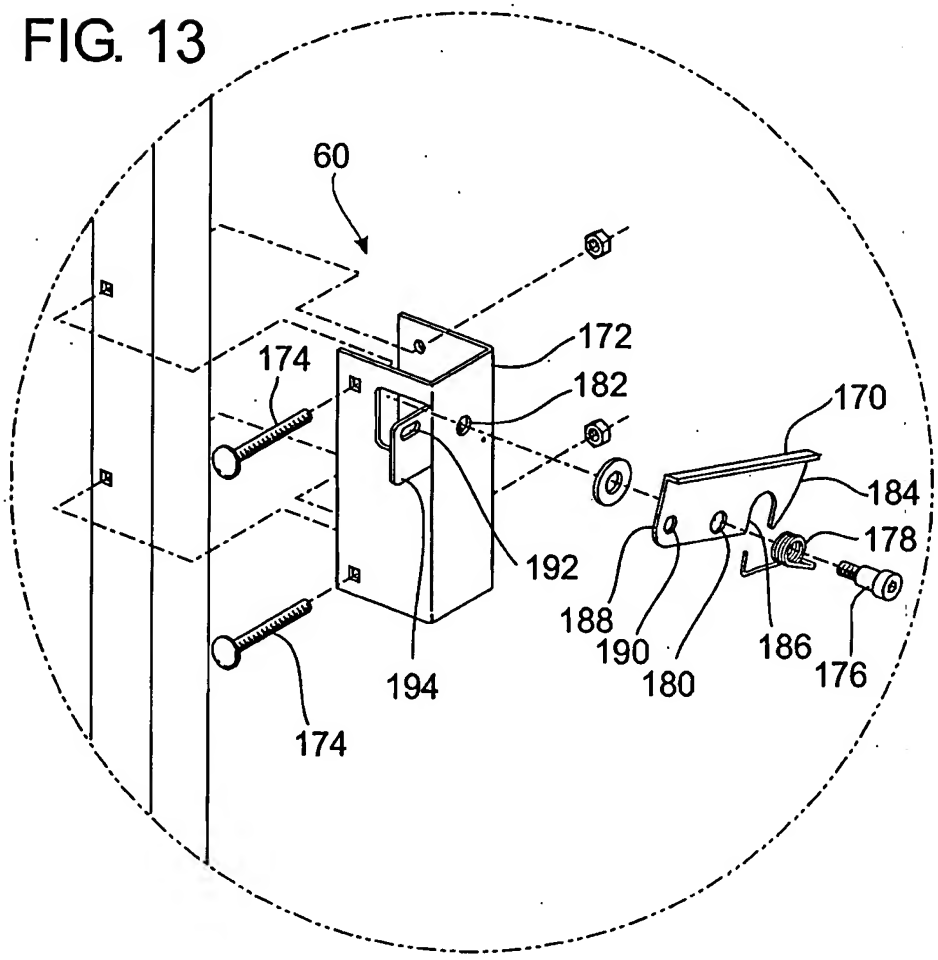
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FIG. 14

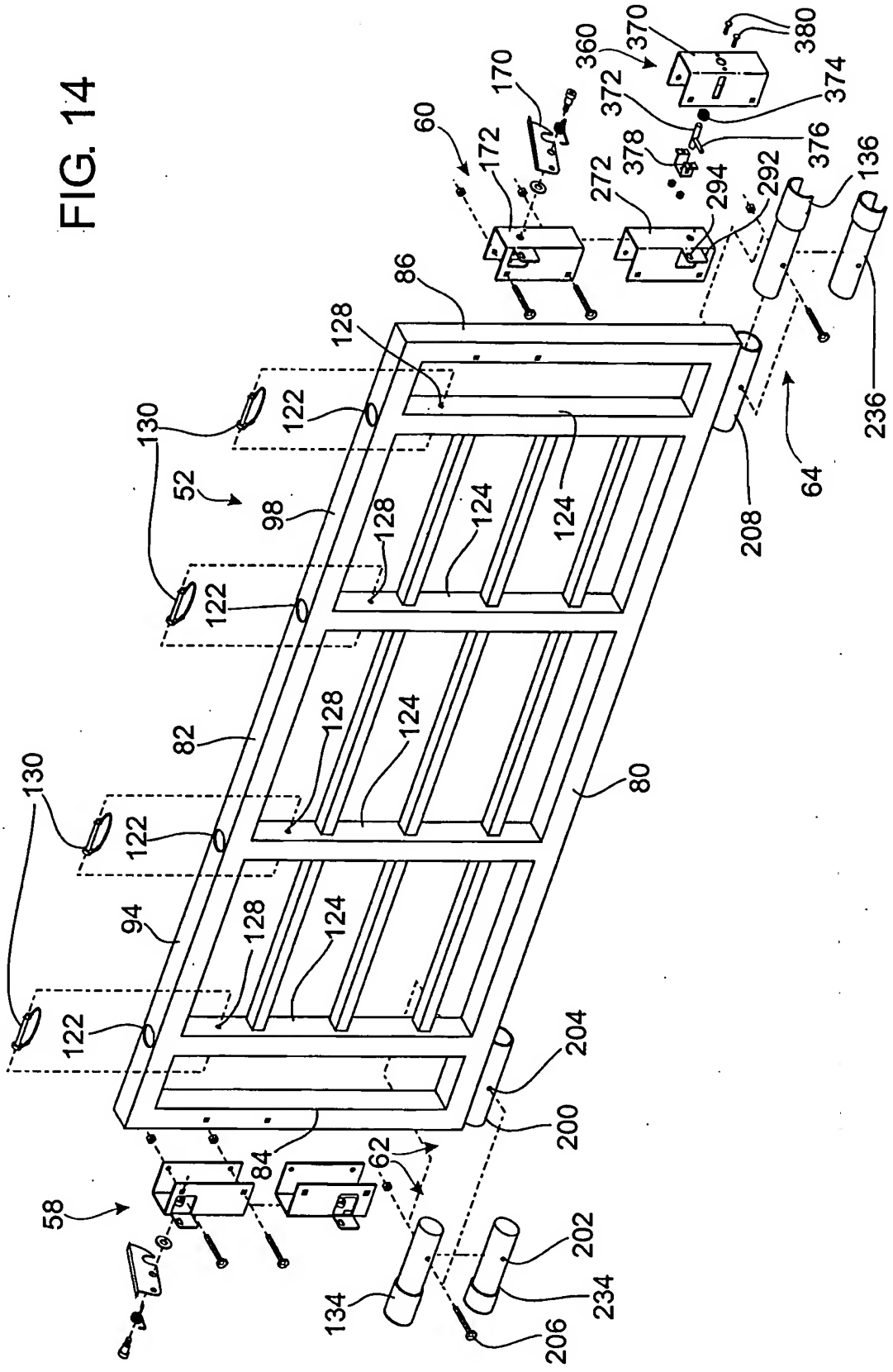
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FIG. 15

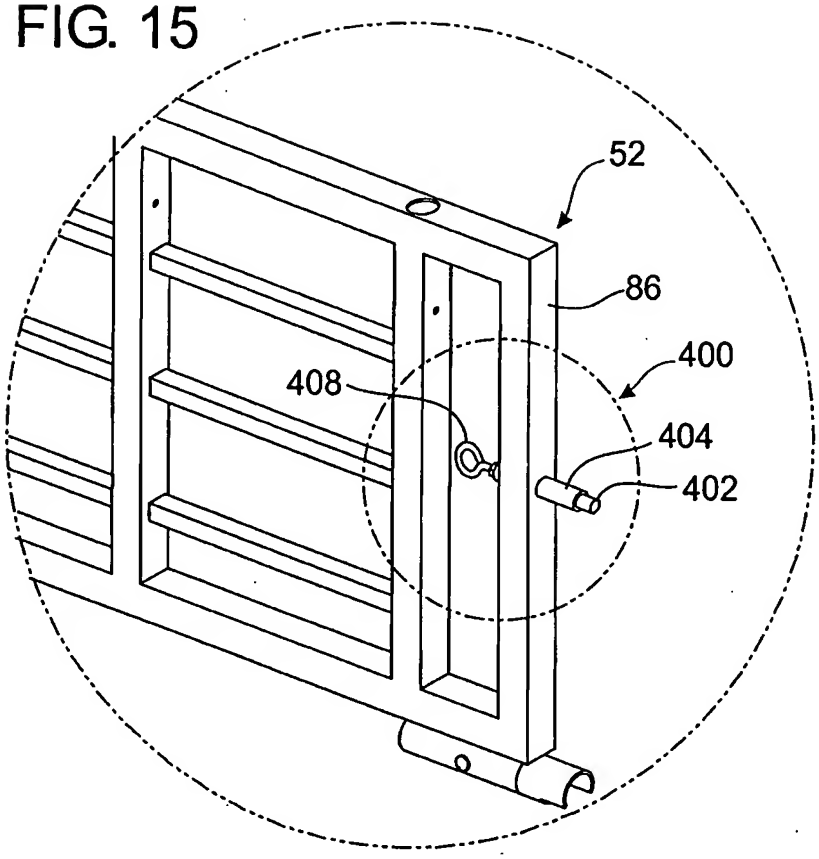


FIG. 16

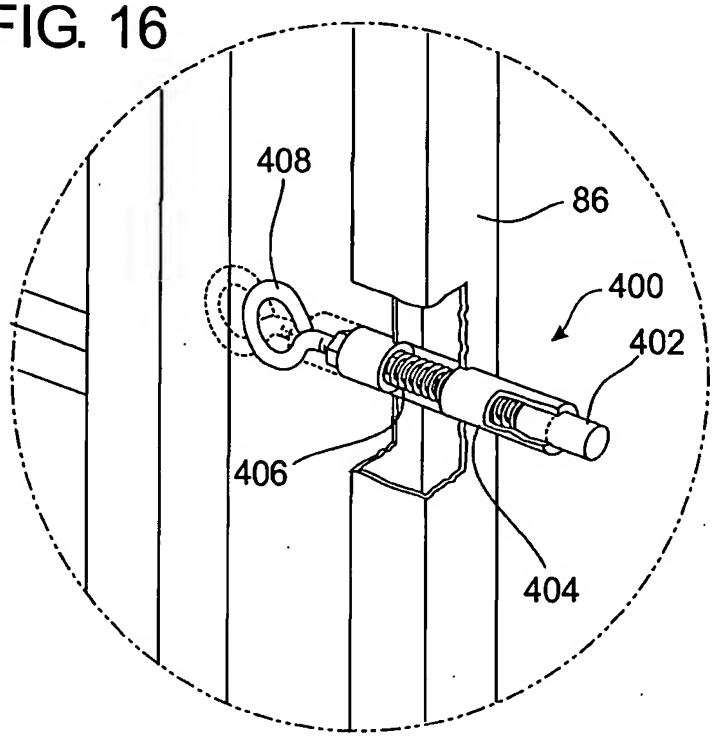
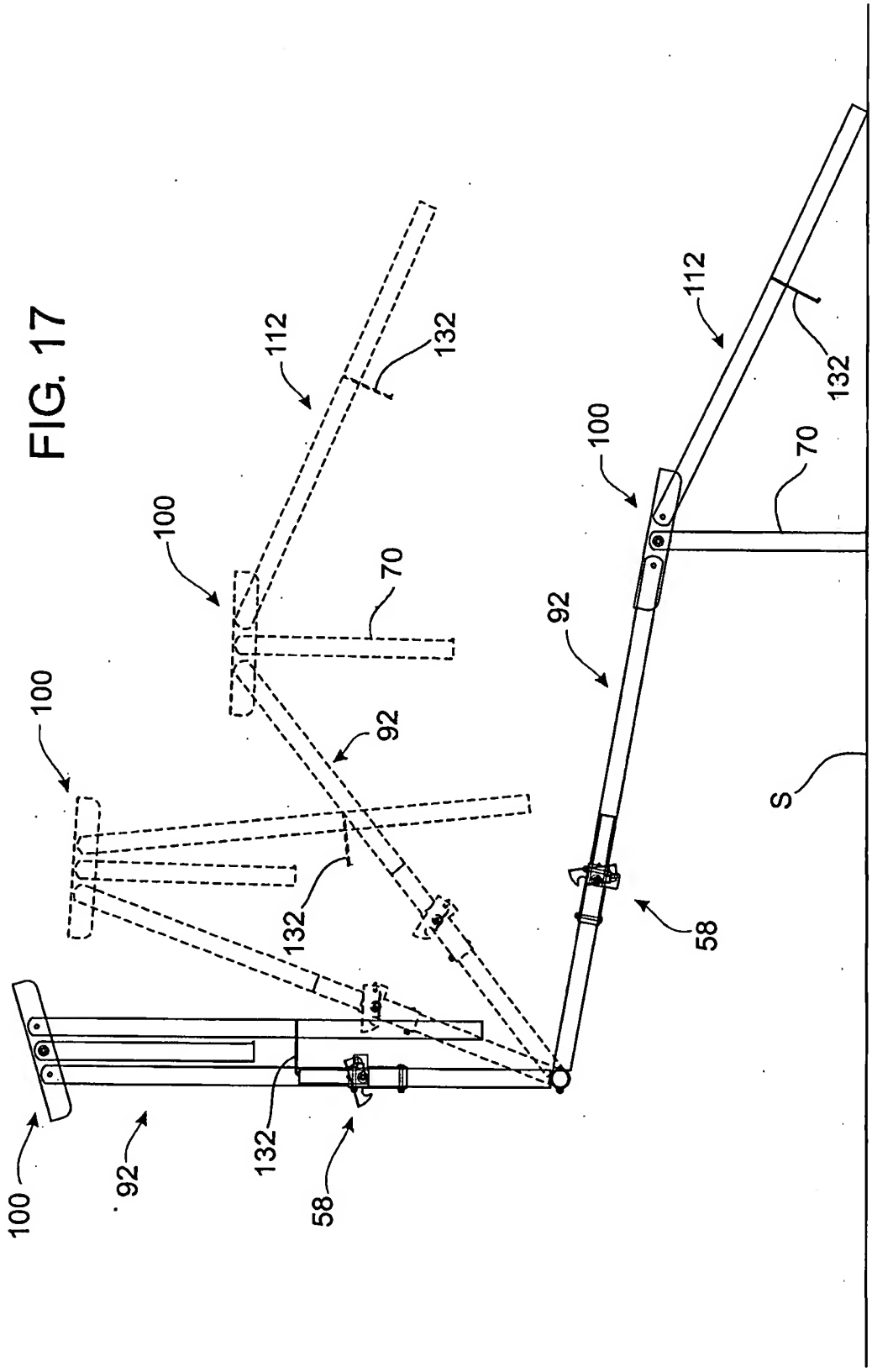


FIG. 17



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Docket No. **HUG107**
Anticipated Classification of this Application:
Class: ___ Subclass: _____
S/N: **Unknown**
Prior Application: **09/750, 498**
Examiner: **Fox, C.**
Art Unit: **3652**

Box PATENT APPLICATION
Assistant Commissioner for Patents
Washington, D.C. 20231

COMBINED DECLARATION AND POWER OF ATTORNEY

As below named inventor, I hereby declare that:

TYPE OF DECLARATION

This declaration is for a **continuation-in-part application** filed February 17, 2004.

INVENTORSHIP, TITLE AND SPECIFICATION IDENTIFICATION

My residence, post office address and citizenship are as stated below next to my name. I believe I am the original, first, and sole inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled:

PICKUP TAILGATE LOADING RAMP

the specification of which **was filed December 29, 2000 as Serial No. 09/750,498 and amended by PRELIMINARY AMENDMENT filed herewith.** A substitute specification, including new claims, is entered by PRELIMINARY AMENDMENT filed herewith.

ACKNOWLEDGMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with title 37, Code of Federal Regulations, § 1.56. In compliance with this duty, there is attached a copy of the information disclosure document originally filed in accordance with 37 CFR 1.98.

PRIORITY CLAIMS

I hereby claim the benefit under Title 35, United States Code, § 120 of the following pending United States application:

Application Serial No.:	**09/750,498**
Date Filed:	**December 29, 2000**
Title as originally filed:	**Pickup Tailgate Loading Ramp**
Title as last amended:	**Pickup Tailgate Loading Ramp**

Insofar as the subject matter of each of the claims of this application is not disclosed in that prior application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose information that is material to the examination of this application, namely, information where there is substantial likelihood that a reasonable Examiner would consider it important in deciding whether to allow the application to issue as a patent, which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

No foreign applications or PCT international applications have been filed and no foreign priority benefits are claimed.

POWER OF ATTORNEY

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

James T. Robinson
Registration No. 33,548

Send correspondence to: **James T. Robinson**
222 East Main Street
Norman, OK 73069-1303

Direct telephone calls to: **James T. Robinson**
(405) 292-1911

DECLARATION

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of **inventor**: **George M. Huggins**

Inventor's signature: George M. Huggins

Date: 2-17-04

Country of Citizenship: **United States of America**

Residence: **1678 County Street 2982**
Blanchard, OK 73010

Post Office Address: **1678 County Street 2982**
Blanchard, OK 73010

THE DECLARATION ENDS WITH THIS PAGE.

Please type a plus sign (+) inside this box → ☐

PTO/SB/01 (12-97)
Approved for use through 9/30/00. OMB 0651-0032
Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

☒ Declaration Submitted with Initial Filing OR ☐ Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)

Attorney Docket Number	.3527
First Named Inventor	George M. Huggins
COMPLETE IF KNOWN	
Application Number	/
Filing Date	
Group Art Unit	
Examiner Name	

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

PICKUP TAILGATE LOADING RAMP

(Title of the Invention)

the specification of which
☒ is attached hereto
OR
☐ was filed on (MM/DD/YYYY) ____ as United States Application Number or PCT International Application Number ____ and was amended on (MM/DD/YYYY) ____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached? YES	NO
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below.

Application Number(s)	Filing Date (MM/DD/YYYY)	
		☐ Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

Please type a plus sign (+) inside this box → ☐

PTO/SB/01 (12-97)
Approved for use through 9/30/00. OMB 0651-0032
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

DECLARATION — Utility or Design Patent Application

I hereby claim the benefit under 35 U.S.C. 120 of any United States application(s), or 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application or PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number (If applicable)

☐ Additional U.S. or PCT international application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

As a named inventor, I hereby appoint the following registered practitioner(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith: ☒ Customer Number 001240 → Place Customer Number Bar Code Label here
OR
☐ Registered practitioner(s) name/registration number listed below

Name	Registration Number	Name	Registration Number
Robert K. Rhea	20,045		

☐ Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/02C attached hereto.

Direct all correspondence to: ☒ Customer Number or Bar Code Label 001240 OR ☒ Correspondence address below

Name	Robert K. Rhea				
Address	5350 S. Western, Ste. 305				
Address					
City	Oklahoma City	State	OK	ZIP	73109
Country	USA	Telephone	405-634-1915	Fax	405-634-1981

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor: ☐ A petition has been filed for this unsigned inventor

Given Name (first and middle (if any))	Family Name or Surname
George M.	Huggins

Inventor's Signature	X George M. Huggins					Date	12-19-0
Residence: City	Blanchard	State	OK	Country	USA	Citizenship	USA
Post Office Address	Rt. #1, Box 48						
Post Office Address							
City	Blanchard	State	OK	ZIP	73010	Country	USA

☐ Additional inventors are being named on the ___ supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto

Sheet _____ of _____

FORM PTO-1449 (REV. 7-80) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTY. DOCKET NO. 3527 | SERIAL NO.

APPLICANT George M. Huggins

FILING DATE | GROUP

LIST OF PRIOR ART CITED BY APPLICANT

(Use several sheets if necessary)

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	AA			None Applicable			
	AB						
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES	TRANSLATION NO
	AL							
	AM							
	AN							
	AO							
	AP							

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

	AR		
	AS		
	AT		

EXAMINER | DATE CONSIDERED

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

December 20, 2000

PRIOR ART STATEMENT
IN THE ACCOMPANYING APPLICATION

Assistant Commissioner for Patents
Washington, D.C. 20231 #3527

Dear Sir:

Neither the inventor or the undersigned have knowledge of pertinent prior patents.

Respectfully submitted,
George M. Huggins

By: Robert K. Rhea
Robert K. Rhea, Patent Agent
Phone: 405-634-1915

RKR/bkf

PTO/SB/17 (12/98)
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Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
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FEE TRANSMITTAL

Patent fees are subject to annual revision on October 1. These are the fees effective October 1, 1997.
Small Entity payments must be supported by a small entity statement, otherwise large entity fees must be paid. See Forms PTO/SB/09-12.
See 37 C.F.R. §§ 1.27 and 1.28.

TOTAL AMOUNT OF PAYMENT ($) 355.00

Complete if Known	
Application Number	
Filing Date	
First Named Inventor	George M. Huggins
Examiner Name	
Group / Art Unit	
Attorney Docket No.	3527

METHOD OF PAYMENT (check one)

1. [X] The Commissioner is hereby authorized to charge indicated fees and credit any over payments to:

Deposit Account Number: 18-1156
Deposit Account Name: Robert K. Rhea

☐ Charge Any Additional Fee Required Under 37 C.F.R. §§ 1.16 and 1.17
☐ Charge the Issue Fee Set in 37 C.F.R. § 1.18 at the Mailing of the Notice of Allowance

2. ☐ Payment Enclosed:
☐ Check ☐ Money Order ☐ Other

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
101	709	201	355	Utility filing fee	355.
106	330	206	165	Design filing fee	
107	540	207	270	Plant filing fee	
108	709	208	355	Reissue filing fee	
114	150	214	75	Provisional filing fee	

SUBTOTAL (1) ($) 355.00

2. EXTRA CLAIM FEES

	Extra Claims		Fee from below		Fee Paid
Total Claims	7 - 20** =	0	X	0	0
Independent Claims	2 - 3** =	0	X	0	0
Multiple Dependent					0

**or number previously paid, if greater; For Reissues, see below

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
103	22	203	11	Claims in excess of 20
102	82	202	41	Independent claim in excess of 3
104	270	204	135	Multiple dependent claim, if not paid
109	82	209	41	** Reissue independent claims over original patent
110	22	210	11	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($) -0-

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
105	130	205	65	Surcharge - late filing fee or oath	
127	50	227	25	Surcharge - late provisional filing fee or cover sheet	
139	130	139	130	Non-English specification	
147	2,520	147	2,520	For filing a request for reexamination	
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	
115	110	215	55	Extension for reply within first month	
116	400	216	200	Extension for reply within second month	
117	950	217	475	Extension for reply within third month	
118	1,510	218	755	Extension for reply within fourth month	
128	2,060	228	1,030	Extension for reply within fifth month	
119	310	219	155	Notice of Appeal	
120	310	220	155	Filing a brief in support of an appeal	
121	270	221	135	Request for oral hearing	
138	1,510	138	1,510	Petition to institute a public use proceeding	
140	110	240	55	Petition to revive - unavoidable	
141	1,370	241	000	Petition to revive - unintentional	
142	1,370	242	000	Utility issue fee (or reissue)	
143	450	243	225	Design issue fee	
144	870	244	335	Plant issue fee	
122	130	122	130	Petitions to the Commissioner	
123	50	123	50	Petitions related to provisional applications	
126	240	126	240	Submission of Information Disclosure Stmt	
581	40	581	40	Recording each patent assignment per property (times number of properties)	
146	790	246	395	Filing a submission after final rejection (37 CFR 1.129(a))	
149	790	249	395	For each additional invention to be examined (37 CFR 1.129(b))	
Other fee (specify)					
Other fee (specify)					

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) ($) -0-

SUBMITTED BY

				Complete if applicable	
Typed or Printed Name	Robert K. Rhea			Reg. Number	20,045
Signature	Robert K Rhea	Date	12-20-99	Deposit Account User ID	

Please type a plus sign (+) inside this box → ☐

PTO/SB/05 (2/98)
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Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 C.F.R. § 1.53(b))

Attorney Docket No.	3527
First Inventor or Application Identifier	George M. Huggins
Title	PICKUP TAILGATE LOADING RAMP
Express Mail Label No.	

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. [X] * Fee Transmittal Form *(e.g., PTO/SB/17)*
   (Submit an original and a duplicate for fee processing)
2. [X] Specification [Total Pages 11]
   (preferred arrangement set forth below)
   - Descriptive title of the Invention
   - Cross References to Related Applications
   - Statement Regarding Fed sponsored R & D
   - Reference to Microfiche Appendix
   - Background of the Invention
   - Brief Summary of the Invention
   - Brief Description of the Drawings *(if filed)*
   - Detailed Description
   - Claim(s)
   - Abstract of the Disclosure
3. [X] Drawing(s) *(35 U.S.C. 113)* [Total Sheets 3]
4. Oath or Declaration [Total Pages 2]
   a. [X] Newly executed (original or copy)
   b. [ ] Copy from a prior application (37 C.F.R. § 1.63(d))
   (for continuation/divisional with Box 17 completed)
   [Note Box 5 below]
   i. [ ] DELETION OF INVENTOR(S)
   Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. §§ 1.63(d)(2) and 1.33(b).
5. [ ] Incorporation By Reference *(useable if Box 4b is checked)*
   The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered to be part of the disclosure of the accompanying application and is hereby incorporated by reference therein.
6. [ ] Microfiche Computer Program *(Appendix)*
7. Nucleotide and/or Amino Acid Sequence Submission
   (if applicable, all necessary)
   a. [ ] Computer Readable Copy
   b. [ ] Paper Copy (identical to computer copy)
   c. [ ] Statement verifying identity of above copies

ADDRESS TO: Assistant Commissioner for Patents
Box Patent Application
Washington, DC 20231

ACCOMPANYING APPLICATION PARTS

8. [ ] Assignment Papers (cover sheet & document(s))
9. [ ] 37 C.F.R.§3.73(b) Statement *(when there is an assignee)* [ ] Power of Attorney
10. [ ] English Translation Document *(if applicable)*
11. [X] Information Disclosure Statement (IDS)/PTO-1449 [X] Copies of IDS Citations
12. [ ] Preliminary Amendment
13. [X] Return Receipt Postcard (MPEP 503)
    (Should be specifically itemized)
14. [X] * Small Entity Statement(s) *(PTO/SB/09-12)* [ ] Statement filed in prior application, Status still proper and desired
15. [ ] Certified Copy of Priority Document(s)
    (if foreign priority is claimed)
16. [ ] Other: .....

** NOTE FOR ITEMS 1 & 14: IN ORDER TO BE ENTITLED TO PAY SMALL ENTITY FEES, A SMALL ENTITY STATEMENT IS REQUIRED BY C.F.R. § 1.27, EXCEPT IF ONE FILED IN A PRIOR APPLICATION IS RELIED UPON BY C.F.R. § 1.28.*

17. If a CONTINUING APPLICATION, *check appropriate box, and supply the requisite information below and in a preliminary amendment*
    [ ] Continuation [ ] Divisional [ ] Continuation-in-part (CIP) of prior application No: _____/_____
    Prior application information: Examiner _____ Group / Art Unit: _____

18. CORRESPONDENCE ADDRESS

[X] Customer Number or Bar Code Label 001240 *(Insert Customer No. or Attach bar code label here)* or [ ] Correspondence address below

Name	Robert K. Rhea				
Address	5350 S. Western, Ste. 305				
City	Oklahoma City	State	OK	Zip Code	73109
Country	USA	Telephone	405-634-1915	Fax	405-634-1981

Name (Print/Type)	Robert K. Rhea	Registration No. (Attorney/Agent)	20,045
Signature	Robert K. Rhea	Date	12-20-00

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231.

PICKUP TAILGATE LOADING RAMP

CROSS REFERENCE TO RELATED APPLICATIONS

Not applicable.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

Not applicable.

BACKGROUND OF THE INVENTION

This present invention relates to loading ramps and more particularly combination pickup truck tailgate and loading ramp.

1. Field of the Invention

2. Description of the Prior Art

When loading articles of considerable mass into a pickup bed it has been common practice to lower the pickup tailgate and provide a temporary ramp, particularly if the article to be loaded is equipped with wheels such as riding lawn mowers or golf carts, in which the temporary ramp consists of lengths of lumber, such as 2 by 8 or 2 by 12, extending from the rearward edge of the pickup tailgate to the surface of the earth. Additionally, ramp ends or ramp feet which are attached to the respective ends of such temporary lumber ramps are commercially available to form a smooth transition from the surface of the earth and the upper end portion of the temporary ramp and the horizontal surface of the tailgate.

This invention is distinctive over such ramps for pickup trucks by providing one end of the ramp of this invention to

serve as a pickup tailgate and including pairs of rigidly connected track forming frames extending from the tailgate position to the surface of the earth in which these frames are hinged intermediate their ends and provided with a gravity positioned support.

BRIEF SUMMARY OF THE INVENTION

A rectangular frame having overall dimensions substantially equal with the perimeter dimensions of the standard tailgate for the pickup truck to be equipped with a loading ramp is provided with hinge and latch mounting members securing the rectangular main frame to the pickup bed for vertical movement about a horizontal axis in opening and closing the tailgate portion. Additionally two pairs of elongated rectangular frames cooperatively hinged together are rigidly connected at one end in laterally spaced relation to the top edge surface forming the rectangular main frame with the other ends of the pairs of hinged frames resting on the surface of the earth and supported at their hinged position by a gravity positioned U-shaped frame pivotally depending from the hinge position of the track forming frames. Each of the main frame and hinged rectangular frames are transversely provided with a plurality of equally spaced apart right angle cross members forming an open frame work for supporting the wheels of vehicles being moved up or down the ramp from the surface of the earth to the bed of the pickup or vice versa. When not in use as a ramp the main frame forms the tailgate of a pickup bed

and the remaining portion of the ramp is disposed upright adjacent the vertical plane of the tailgate for ease in lowering the ramp to a loading or unloading position by simply lowering the tailgate and extending the hinged frames rearwardly to the surface of the earth.

The principal object of this invention is to provide a pickup loading ramp having a tailgate portion, which remains connected with the pickup at all times and is easily moved from a pickup bed closed position to a pickup bed ramp loading or unloading position for wheel equipped vehicles.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

Figure 1 is a perspective view of the loading ramp in operative position on a pickup truck, the truck chassis being omitted for clarity;

Figure 2 is a rearward elevational view of the loading ramp when folded to pickup tailgate closed position, of the pickup cab omitted for clarity;

Figure 3 is a top plan view of the loading ramp, per se;

Figure 4 is a fragmentary vertical cross sectional view, to a different scale, taken substantially along the line 4---4 of Fig. 3;

Figure 5 is a perspective view of the loading ramp in operative position when viewed from one side;

Figure 6 is a fragmentary side elevational view of the loading ramp when folded to tailgate closed position;

Figure 7 is a top plan view of a modified ramp for load-

ing and unloading three wheel vehicles;

Figure 8 is a top plan view of loading ramp track sections forming the alternative embodiment of Fig. 7; and,

Figure 9 is an elevational view of the hinged track support.

DETAILED DESCRIPTION OF THE INVENTION

Referring first to Figs. 1 and 3, the reference numeral 10 indicates a generally rectangular frame in overall configuration lying in a common plane, forming a ramp, pivotally connected at one end with the tailgate position of a conventional pickup truck 12.

The ramp 10 includes a rectangular tailgate portion 14 having overall dimensions substantially equal with the overall dimensions of a tailgate of the pickup truck 10. The tailgate section 14 comprises a base rail 16 connected, in parallel relation, with a top rail 18 both formed from tubing material and interconnected by a pair of tubular end rails 20 and 22. A pair of hinge members 24 cooperating with the tailgate hinges, not shown, project outwardly from respective end portions of the base rail 16 at its juncture with the end rails 20 and 22, respectively. Respective end portions of the top rail support a pair of latches 26 for securing the tailgate 14 in closed position.

The ramp 10 further includes a pair of elongated ramp tracks 28 and 30 rigidly connected at one end in laterally spaced relation with the top rail 18 of the gate section 14.

Since the ramp forming tracks 28 and 30 are identical, only the track 28 is described, in detail in the interest of brevity.

The track 28 comprises a pair of U-shaped frame members 32 and 34 having leg end portions 35-36 and 38-39 respectively disposed in confronting relation and pivotally connected with one flange of a pair of right angle hinge forming members 42 and 43 for vertical pivoting movement of the U-shape member 34 toward and away from the underside of the other U-shaped member 32, as viewed in Fig. 3. The bight portion 44 of the U-shaped member 32 is rigidly secured longitudinally to one end portion of the tailgate top rail 18 in spaced relation with respect to the other track 30. The bight portion 46 of the U-shaped member 34 is normally supported by the surface of the earth 47 (Fig. 5).

A track support member 50 (Fig. 9) comprising a U-shaped member having a tubular bight portion 51 and upstanding angular metal legs 52 and 54 pivotally connected with the hinge forming members 42 and 43 between the confronting ends of the legs of the U-shaped members 32 and 34. The track support 50 is normally vertically disposed, by gravity, and contacts the surface of the earth 47 below the respective track 28 and 30 when the loading ramp 10 is disposed in loading position (Fig. 5).

The track 28 further includes a plurality of transverse cross members 56 extending between the legs of the U-shaped

members 32 and 34 in longitudinal equally spaced relation. Each of the cross members 56 comprise a length of rigid right angle metal disposed with the edges of the angular flanges directed upwardly as viewed in Fig. 4 for increased frictional resistance against the wheels of vehicles moving up or down the plane of the ramp during the loading or unloading movement. Similarly, the tailgate section 14 is provided with a plurality of longitudinally cross members 58 extending between the end rails 20 and 22 and are identical in transverse cross section with the track cross members 56. A plurality of brace members 59 extend between the tailgate bottom rail 16 and top rail 18 for rigidity.

OPERATION

In operation of the embodiment 10, assuming the factory equipped tailgate of the truck 12 has been removed, the tailgate section hinge members 24 are cooperatively received by the hinge members of the tailgate, not shown, on the pickup truck bed. The latches 26 secure the tailgate section 14 when in closed position to the pickup bed side walls. When not in use the ramp track members 28 and 30 are disposed in the position illustrated by Fig. 6 with the U-shaped members 34 depending from the hinge members 42 and 43 and the track support members 50 interposed between the U-shaped frames 32 and 34.

When it is desired to utilize the track for loading and unloading a wheeled vehicle, not shown, the tailgate latches

26 are released and the ramp 10 is pivoted downwardly and rearwardly about the horizontal axis of the tailgate hinge members 24 until the bight portion 46 of the U-shaped member 34 rests on the surface of the earth 47 and gravity disposes the track support 50 in a vertical position (Fig. 5). Thereafter a wheeled vehicle, not shown, under its own power may be driven up or down the plane formed by the loading ramp 10.

An alternative embodiment 10' is illustrated by Fig. 7 in the event it is desired to load a three wheel vehicle into the pickup bed. A temporary track 28' (Fig. 8) is interposed between the tracks 28 and 30 to supply a track for the single front or rear wheel of a three wheel vehicle in negotiating the ramp 10'. The temporary track 28' similarly comprises a U-shaped frame member 32' and a companion U-shaped frame member 34', each having their respective legs disposed in confronting relation. The bight portion 44' of the U-shaped member 32' is interposed between the tracks 28 and 30 adjacent the tailgate top rail 18. The U-shaped member 32' is maintained in interposed relation between the tracks 28 and 30 by pairs of flanges 60 and 62 secured in transverse opposition to the legs of the U-shaped member 32' and overlap the adjacent legs of the members 28 and 30. Similarly the other U-shaped member 34' is provided with pairs of rigidly connected flanges 64 and 66 similarly overlapping the legs of the adjacent tracks 28 and 30 to complete the configuration of the alternative embodiment 10'.

Obviously the invention is susceptible to changes or alterations without defeating its practicability. Therefore, I do not wish to be confined to the preferred embodiment(s) shown in the drawing(s) and described herein.

I claim:

CLAIMS

1. A pickup truck tailgate and loading ramp, comprising:
main frame means including a base rail and a top rail for occupying the position and function of a pickup tailgate; and,
elongated frame means connected at one end with said main frame means top rail for forming a loading ramp track when in tailgate lowered position.

2. The truck tailgate and loading ramp according to claim 1 in which said frame means comprises:
two pairs of longitudinally hingedly interconnected frames rigidly connected in laterally spaced relation with said main frame top rail; and,
a ramp track support hingedly depending from the hinged position of said pairs of frames.

3. The truck tailgate and loading ramp according to claim 2 and further including:
a plurality of cross members extending transversely of said main frame and said one frame in longitudinal spaced-apart relation.

4. The truck tailgate and loading ramp according to claim 1 in which said frame means comprises:
at least one pair of longitudinally hingedly interconnected frames; and,
a ramp track support hingedly depending from the hinged position of said one pair of frames.

5. The truck tailgate and loading ramp according to claim 4 and further including:

a plurality of cross members extending transversely of said main frame and said one frame in longitudinal spaced-apart relation.

6. A pickup truck tailgate and loading ramp, comprising:

main frame means including end rails connected with a base rail and a top rail for occupying the position and function of a pickup tailgate;

pairs of elongated U-shaped frame means having hingedly connected legs and rigidly connected at one end in laterally spaced relation with said main frame means top rail for forming loading ramp tracks when in tailgate lowered position; and,

a ramp track support hingedly depending from the hinged position of said pairs of frames.

7. The truck tailgate and loading ramp according to claim 6 and further including:

a plurality of cross members extending transversely of said main frame and said pairs of frames in longitudinal spaced-apart relation.

ABSTRACT OF THE DISCLOSURE

A pickup truck tailgate and loading ramp is formed by a main frame dimensioned to be hingedly received by a given pickup bed. Two pairs of hingedly interconnected frames are rigidly secured to the top rail of the tailgate section and form a pair of ramp tracks when in tailgate lowered position. When not in use the track forming frames are disposed rearwardly of the closed tailgate section.

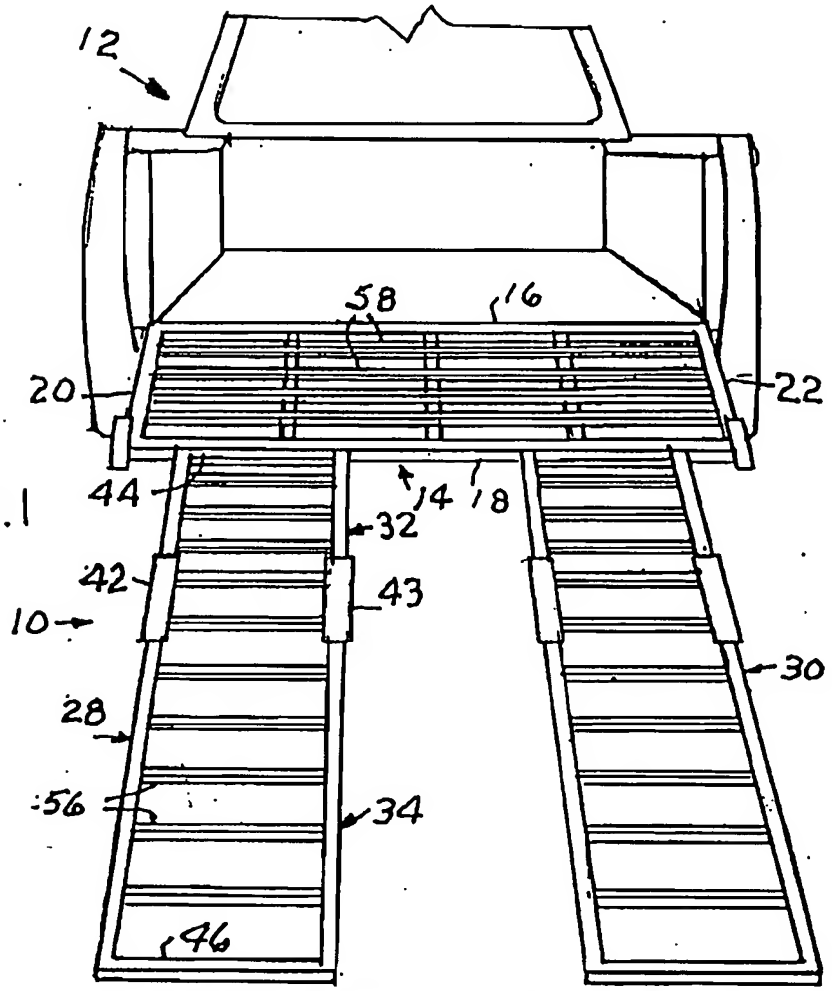
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FIG. 1

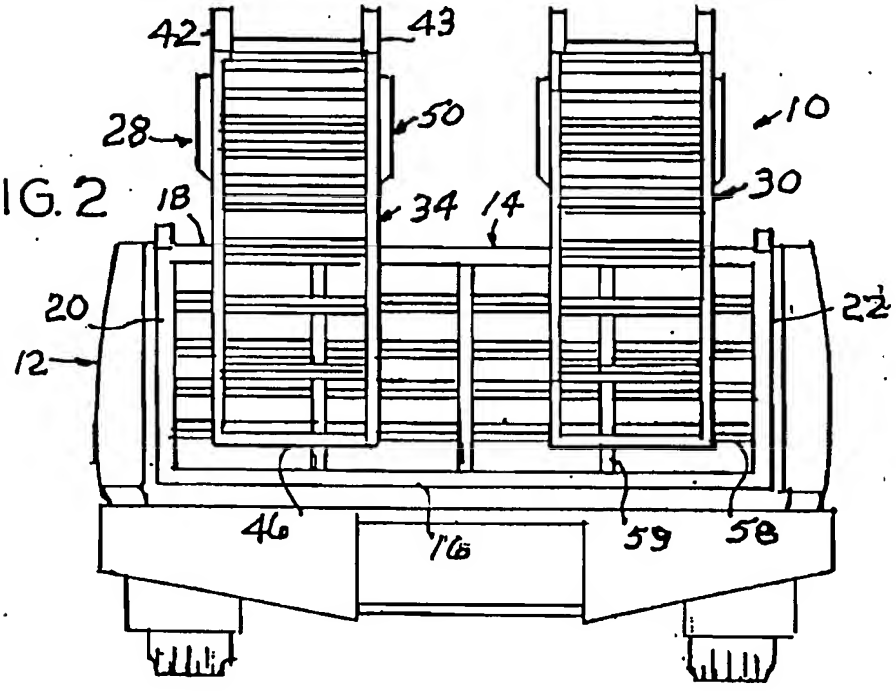
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FIG. 2

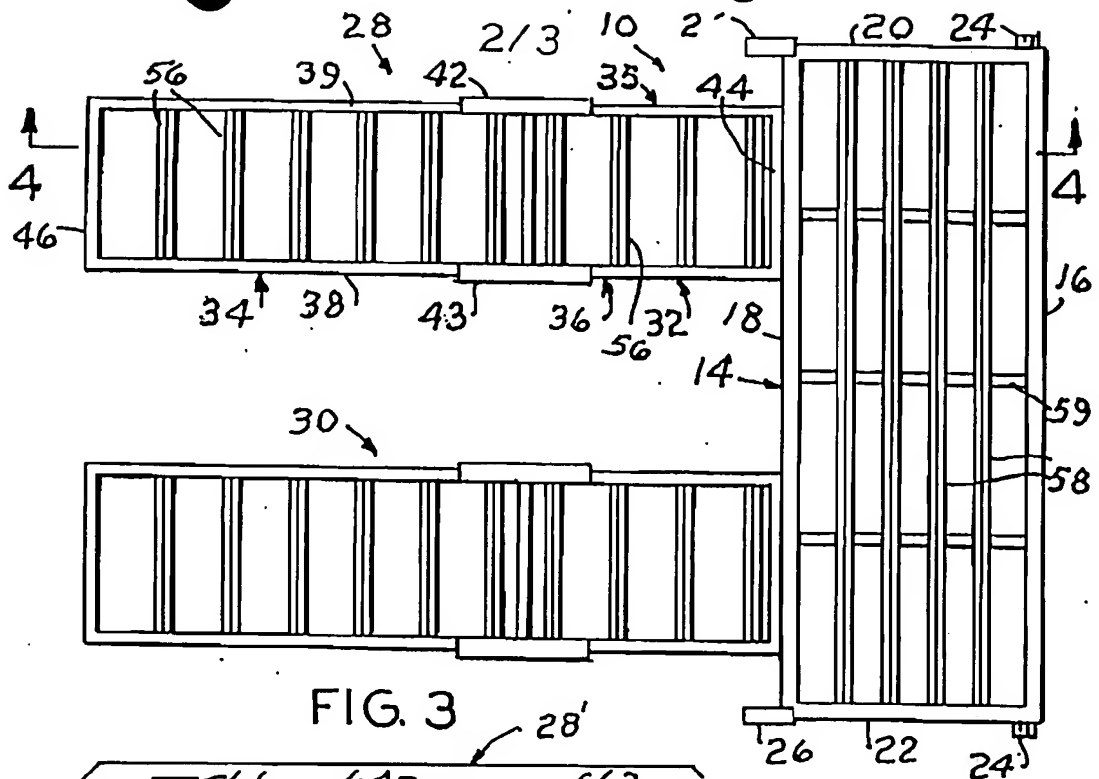


FIG. 3

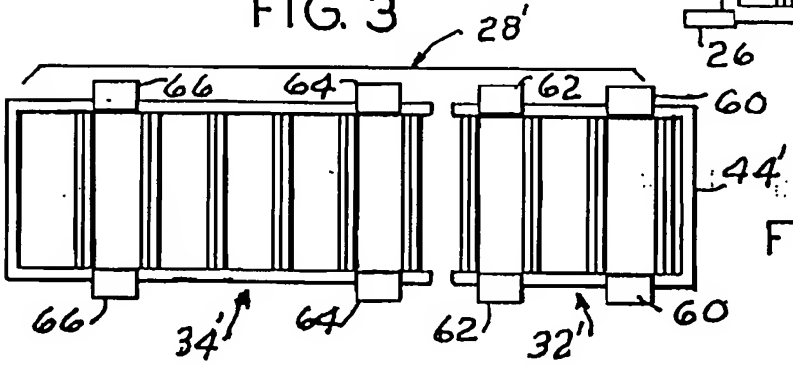


FIG. 8

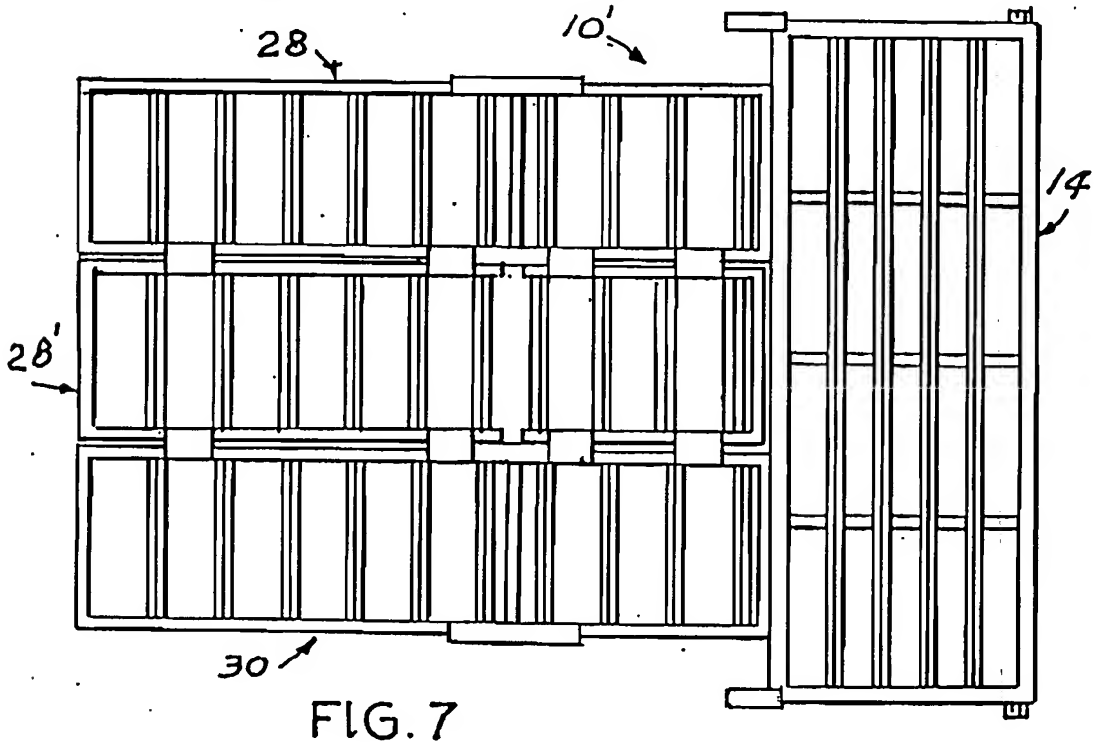
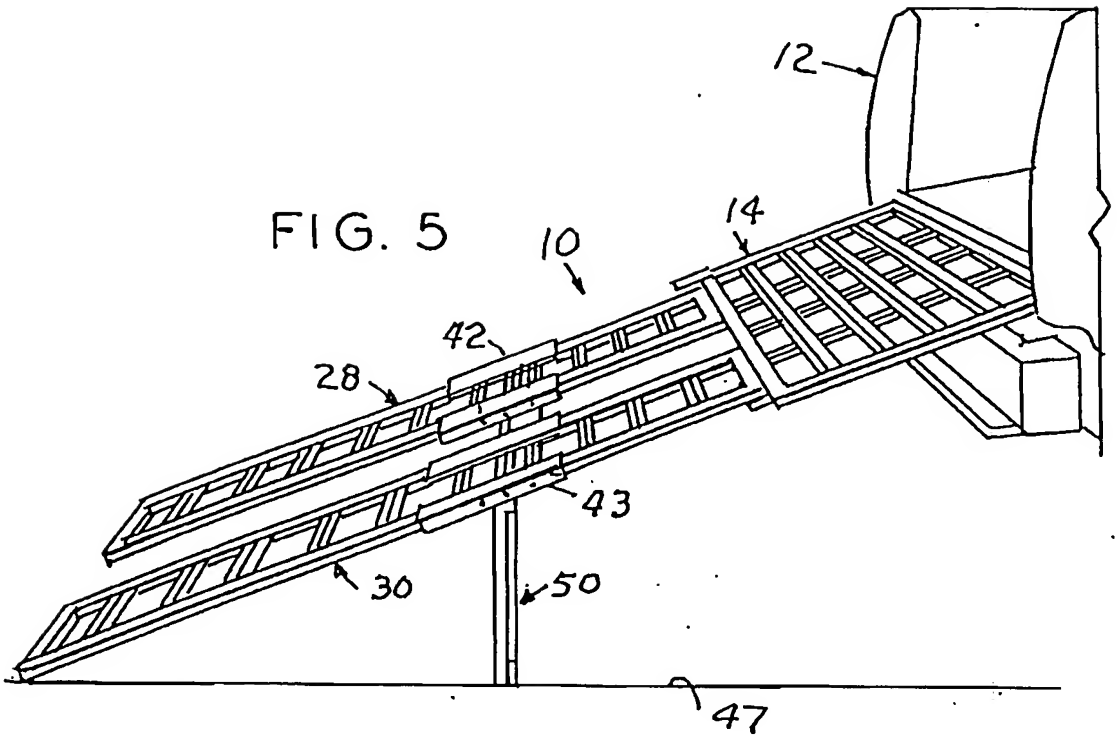


FIG. 7

FIG. 5



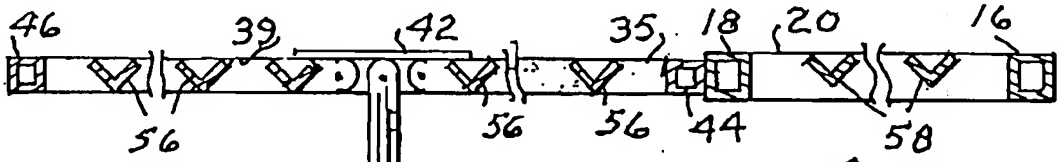
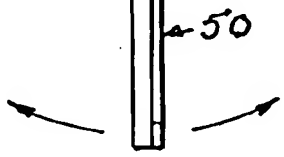


FIG. 4



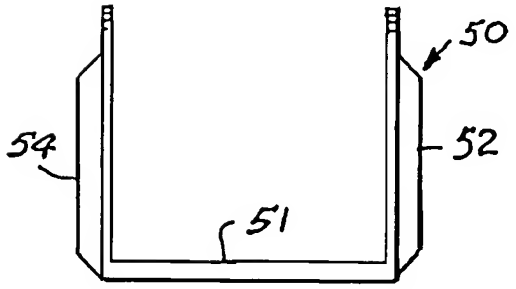


FIG. 9

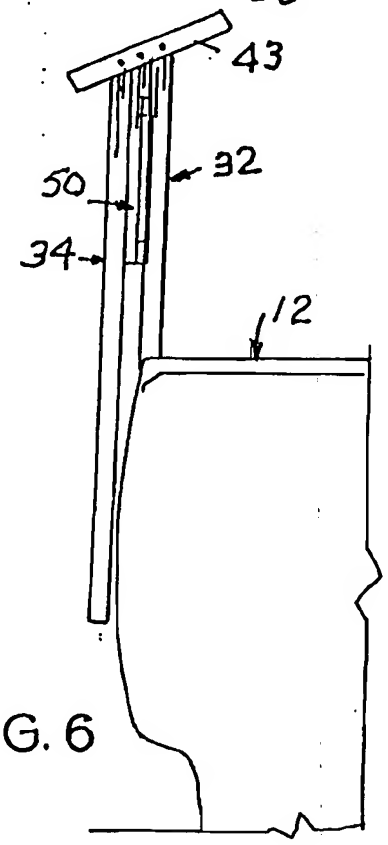


FIG. 6

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Docket No. **HUG107**
Anticipated Classification of this Application:
Class: **XXX** Subclass: **XXXXXX**
S/N:
Prior Application: **09/750,498**
Examiner: **Fox, C.**
Art Unit: **3652**

Mail Stop PATENT APPLICATION
Commissioner for Patents
PO Box 1450
Alexandria, VA 223313-1450

PRELIMINARY AMENDMENT

Dear Sir:

Please amend the continuation-in-part application as follows:

IN THE DRAWINGS:

1. Cancel the old figures and add new Figures **1-17**, attached.

IN THE SPECIFICATION:

2. Cancel the original specification and substitute the enclosed specification therefor **(in the present application only)**:

IN THE CLAIMS:

3. Cancel all claims in the previous application **(in the present application only)** and add new claim 1.

4. Add new claim 1 as set forth in the attached patent application.

IN THE ABSTRACT:

5. Cancel the original abstract and substitute the attached Abstract therefor.

REMARKS

By the present amendment, all claims in the parent application have been canceled. New claim 1 has been added. Only a single claim is present in the application, as amended. Applicant respectfully requests that claim 1 be allowed at an early date.

In the Drawings. **10** sheets of drawings include 12 new Figures. Each figure contains some new matter not contained in the original application.

In the specification. The new specification adds references to new FIGS. **1-17** in both the Brief Description of the Drawings and also in the Detailed Description.

In the claims. The proposed new claim is drawn to a **Pickup Tailgate Loading Ramp.**

In the abstract. The new Abstract conforms to the claimed invention.

Respectfully submitted,

James T. Robinson, Reg. No. 33,548
222 East Main Street
Norman, OK 73069-1303
Telephone (405) 292-1911
FAX (405) 321-1104

ATTORNEY FOR APPLICANT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	**Huggins, George M.**	Art Group:	**Unknown**
App. No.:	**Unknown**		
For:	**Pickup Tailgate Loading Ramp**	Atty's D/N:	**HUG107**

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Group Director of Group

PETITION TO MAKE SPECIAL BECAUSE OF APPLICANT'S AGE (37 CFR 1.102(c) and MPEP § 708.02 IV)

Applicant hereby petitions to make this application special because applicant is over 65 years of age.

As a showing of this fact, accompanying this petition is:

a Declaration/Affidavit by the applicant that he is over 65 years of age

No fee is required with this petition in accordance with 37 CFR § 1.102(c).

James T. Robinson, Reg. No. 33,548
EXCLUSIVITY-LAW, INC.
222 East Main Street
Norman, OK 73069-1303
Telephone 405.292.1911
Facsimile 405.321.1104
E-mail eli@sbcglobal.net

ATTORNEY FOR APPLICANT

DECLARATION/AFFIDAVIT OF GEORGE M. HUGGINS

State of Oklahoma)
) ss.
Cleveland County)

George M. Huggins, being first duly sworn, upon oath states:

1. I am the applicant for a patent for a **Pickup Tailgate Loading Ramp** in an application filed simultaneously herewith.

2. I was born on January 27, 1928.

3. I am over 65 years of age.

4. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Further Affiant sayeth not.

GEORGE M. HUGGINS
Applicant

Subscribed and sworn to before me this 17th day of February, 2004.

NOTARY PUBLIC, # 92009579

My Commission Expires:

07-06-2004

NOTARY PUBLIC — OFFICIAL SEAL — James T. Robinson — Cleveland County — Commission Expires Jul. 6 2004

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	**Huggins, George M.**	)	U.S. Appl. No. **10/781,483**
Patent No.:	**Unknown**	)	Filed: **February 17, 2004**
Issue Date:	**Unknown**	)	
For:	**Pickup Tailgate Loading Ramp**	)	

Mail Stop Petition
Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED UNINTENTIONALLY UNDER 37.CFR 1.137b

The above identified application became abandoned for failure to file a timely and proper reply to an OFFICE ACTION mailed by the United States Patent & Trademark on October 20, 2004 Office. The date of abandonment was January 20, 2005.

We are enclosing the following:

1. **Check No. 2873** in the amount of **$750.00** for the PETITION FEE under 37 CFR 1.17(m).

   Status remains **small entity**. **$750.00**

2. A reply to the above noted OFFICE ACTION is *NOT* enclosed herewith for the reasons set forth below. *See* "Remarks."

3. Since this utility patent application was filed after June 8, 1995, no TERMINAL DISCLAIMER is required.

4. RECEIPT VERIFICATION POST CARD is enclosed herewith.

5. **OVERPAYMENT.** As to any overpayment made please send refund check.

EXCLUSIVITY-LAW, INC.
222 EAST MAIN
NORMAN, OK 73069-1303
(405) 292-1911

FIRST FIDELITY BANK, N.A.
NORMAN, OK 73069
39-269/1030

2873

8/8/2005

PAY TO THE ORDER OF Commissioner of Patents & Trademarks $**750.00

Seven Hundred Fifty and 00/100********** DOLLARS

Commissioner of Patents & Trademarks

MEMO HUG107

AUTHORIZED SIGNATURE

"002873" "103002691" 046302817"

Details on Back. Security Features Included

A **PETITION FOR REVIVAL OF AN APPLICATION FOR PATENT ABANDONED UNINTENTIONALLY** filing (3 pages) for a **Pickup Tailgate Loading Ramp** has been received by the USPTO. The sole inventor is **George M. Huggins**, D/N HUG107, and the documents filed include a PETITION FOR REVIVAL OF PATENT ABANDONED UNINTENTIONALLY (4 pages), a substitute Specification, Claims, and Abstract with highlights (15 pages), a substitute Specification, Claims, and Abstract without highlights (15 pages), Papers Filed February 17, 2004 (60 pages), Formal drawings (10 pages), INFORMATION DISCLOSURE STATEMENT with attachments, Check No. 2873 in the amount of $750.00 as a filing fee, and this receipt verification post card. Date received and is stamped hereon.

6. **STATEMENT.** The entire delay in filing the required reply from the due date for the required reply until the filing of a grantable petition under 37 CFR 1.137(b) was unintentional.

REMARKS

Information Disclosure Statement

On page 2 of the Office Action mailed October 20, 2004, the examiner noted that the information disclosure statement filed February 17, 2004 fails to comply with provisions of 37 CFR 1.97. 1.98 and MPEP § 609 because there are not references cited. Enclosed with this Petition is an Information Disclosure Statement which includes the prior art from the parent application (S/N 09/750,498), together with additional prior art found by the applicant.

Drawings

On page 2 of the Office Action mailed October 20, 2004, the examiner objected to the drawings "because the new drawing alluded to in papers filed on February 17, 2004 are not in the file." A rigorous search of applicant's attorney's files indicates that a completely new set of drawings accompanied the CIP application filed February 17, 2004. Prior to filing the CIP application on February 17, 2004, 3 complete sets of documents mailed to the USPTO were made by applicant's attorney (for attorney's file, for the client, and for the reading file). Each set appears to be complete. Thus it appears the originals from which the copies were made were sent to the USPTO in a single packet. We are enclosing a complete set of documents filed in the USPTO on February 17, 2004.

It is respectfully suggested that the examiner may have mistakenly considered the drawings provided in the attachment containing documents from the parent application. The parent application contained 3 sheets of drawings and 9 figures. In the alternative, perhaps the missing drawings were misplaced within the USPTO.

Still referring to page 2 of the Office Action mailed October 20, 2004, the examiner's comments regarding an "amended" figure number appears to be directed to something other than applicant's CIP application filed February 17, 2004.

In the Preliminary Amendment filed February 17, 2004, applicant stated as follows:

> By the present amendment, all claims in the parent application have been canceled. New claim 1 has been added. Only a single claim is present in the application, as amended. Applicant respectfully requests that claim 1 be allowed at an early date.
>
> ***In the Drawings.*** **10** sheets of drawings include 12 new Figures. Each figure contains some new matter not contained in the original application.

Specification

On page 3 of the Office Action mailed October 20, 2004, the examiner objected to the disclosure because "no marked-up copy of the substitute specification is present." In the Preliminary Amendment included in applicant's CIP filing, applicant stated as follows:

> ***In the specification.*** The new specification adds references to new FIGS. **1-17** in both the Brief Description of the Drawings and also in the Detailed Description.

Applicant is enclosing herewith a marked-up copy of the substitute specification, together with a clean copy of the substitute specification.

Applicant's marked-up copy of the specification includes a marked-up claim not contained in the parent application.

Claim Rejections – 35 USC § 102(b)

On page 3 of the Office Action mailed October 20, 2004, the examiner rejected Claim 1 as being anticipated by McCleary (US 5,133,584). In the Preliminary Amendment included in applicant's CIP filing, applicant stated as follows:

> ***In the claims.*** The proposed new claim is drawn to a **Pickup Tailgate Loading Ramp.**

Response to Amendment

On page 4 of the Office Action mailed October 20, 2004, the examiner noted as follows:

Not all portions of the preliminary amendment have been forwarded to the office. There is no copy of the new figures in the application file. Also the claims present originally had a total of seven claims, per the preliminary amendment claims 2-7 have been cancelled. There is no marked-up copy of the claims or of the new specification. As they are said to be enclosed with the letter both the claims and the specification in the file will be considered to be those copies at this time. A marked up copy of the specification and claims are required in response to this action. A copy of the claim that is presently under examination is presented below.

The claim presented by the examiner is, in fact, claim 1 from the original application *and not from the CIP application.*

Request for Examination *Ab Initio*

In summary, it appears the claim of applicant's CIP application has not been examined to date. Therefore, in addition to granting applicant's PETITION TO REVIVE UNINTENTIONALLY ABANDONED APPLICATION, applicant further requests an examination *ab initio* of the claim contained in applicant's CIP application filed February 17, 2004.

In the alternative, applicant requests granting of applicant's PETITION TO REVIVE UNINTENTIONALLY ABANDONED APPLICATION and an opportunity to file a REQUEST FOR CONTINUED EXAMINATION (formerly a CONTINUED PROSECUTION APPLICATION) based on the reinstated CIP application.

Request for Waiver of Fee under 37 CFR 1.17(m)

Due to the circumstances in this case, as set forth above, applicant respectively waiver of the fee in the interests of justice.

Respectfully submitted,

Date: August 8, 2005

James T. Robinson, Reg. No. 33,548
222 East Main Street
Norman, OK 73069-1303
Telephone (405) 292-1911
Facsimile (405) 321-1104

ATTORNEY FOR APPLICANT

FIG. 1

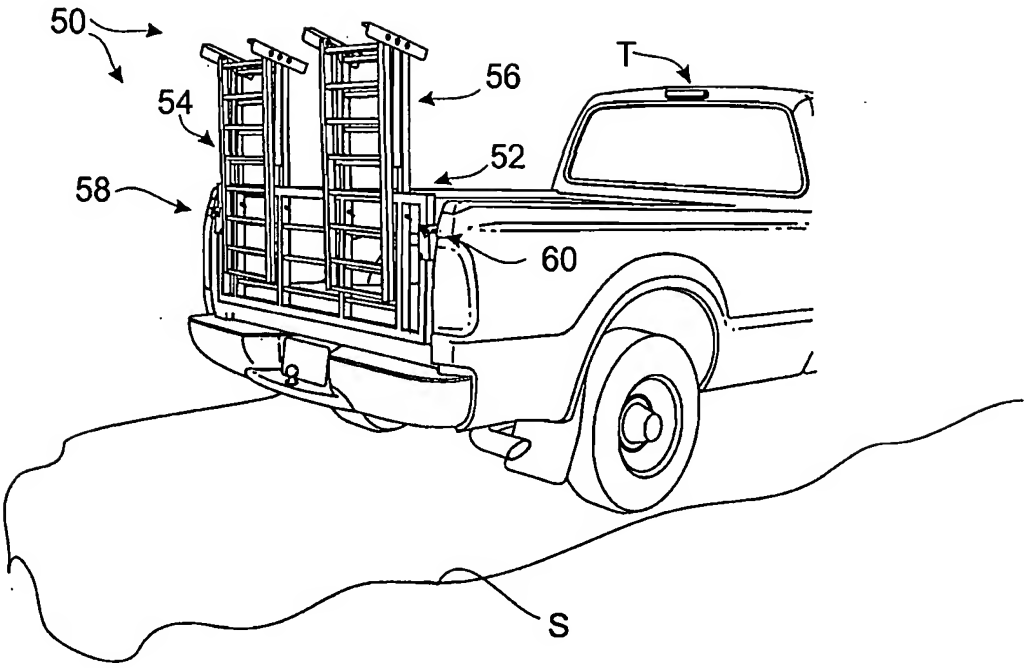


FIG. 2

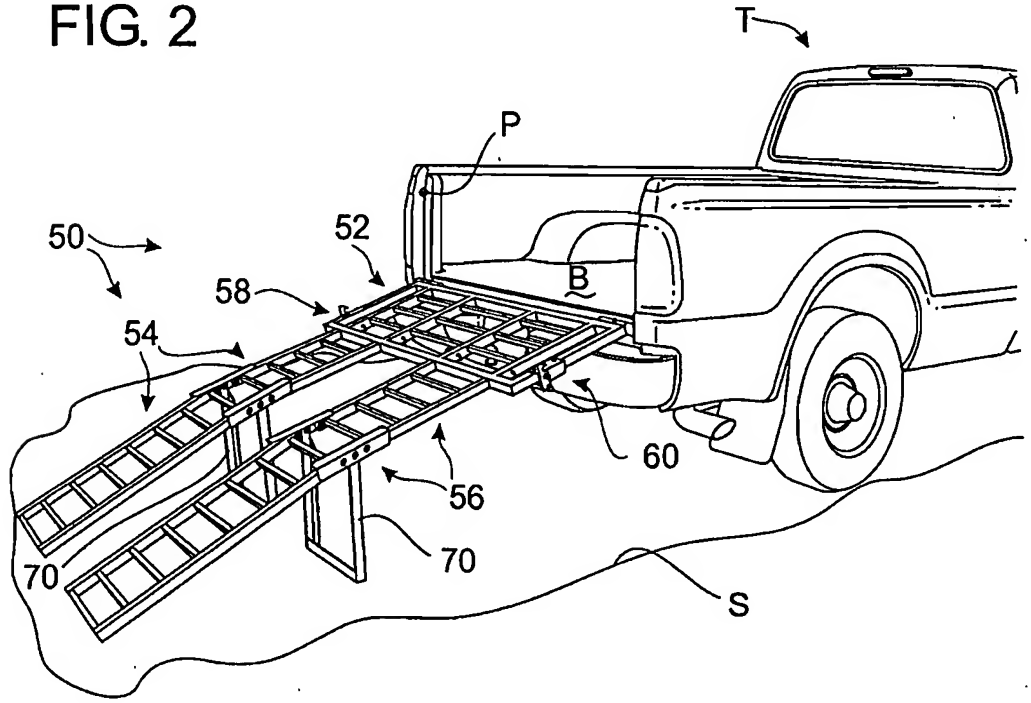


FIG. 3

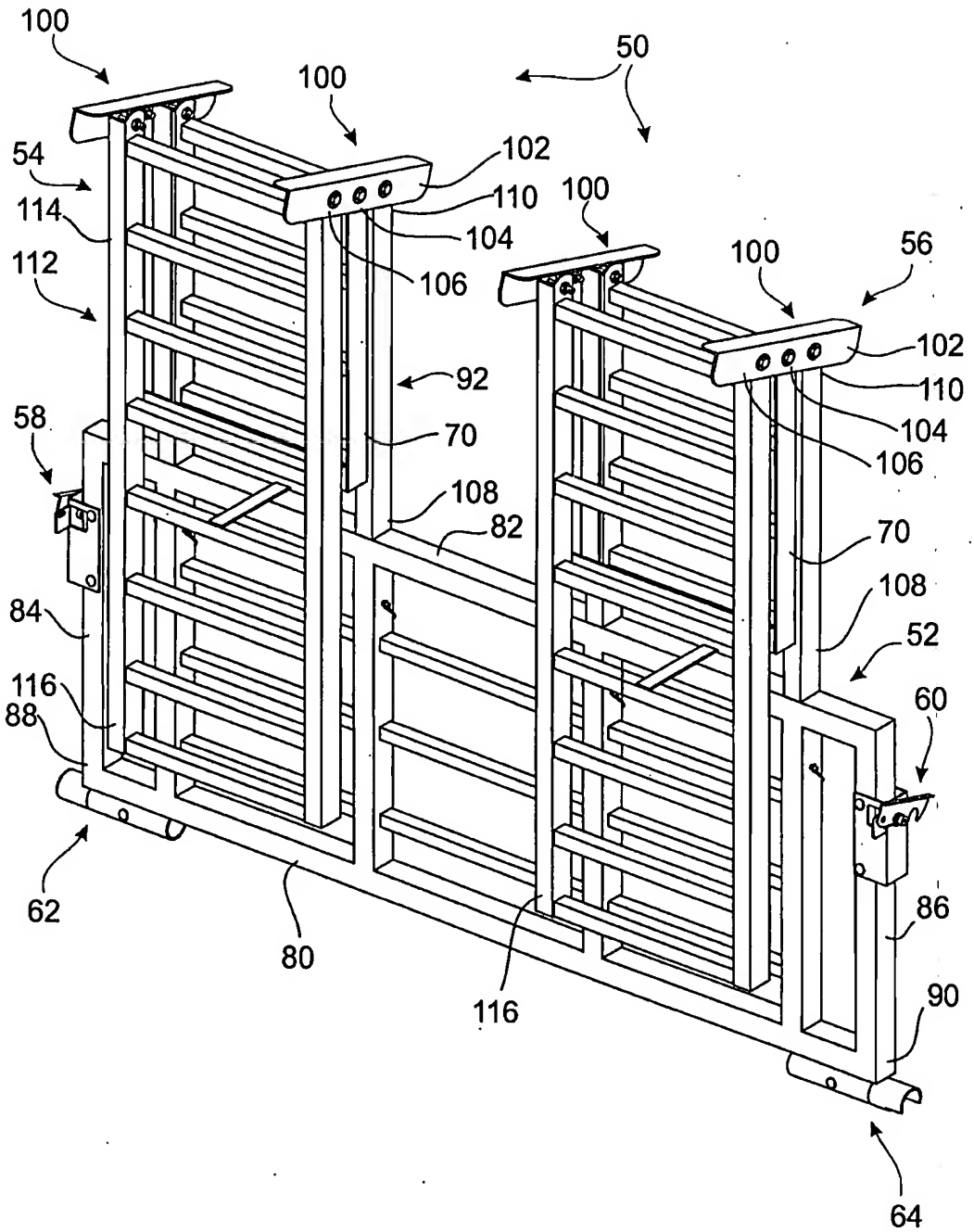

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FIG. 4

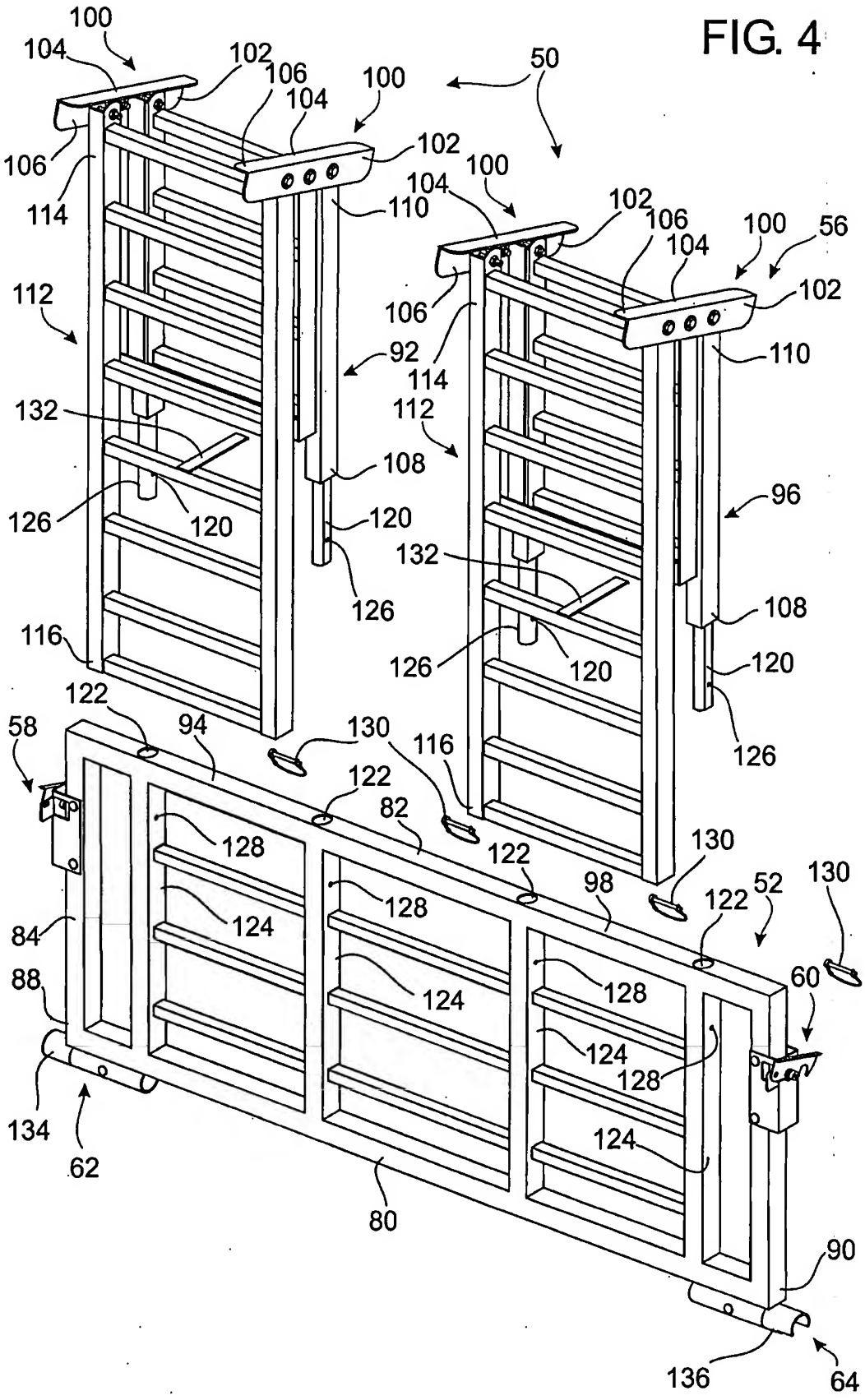
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FIG. 5

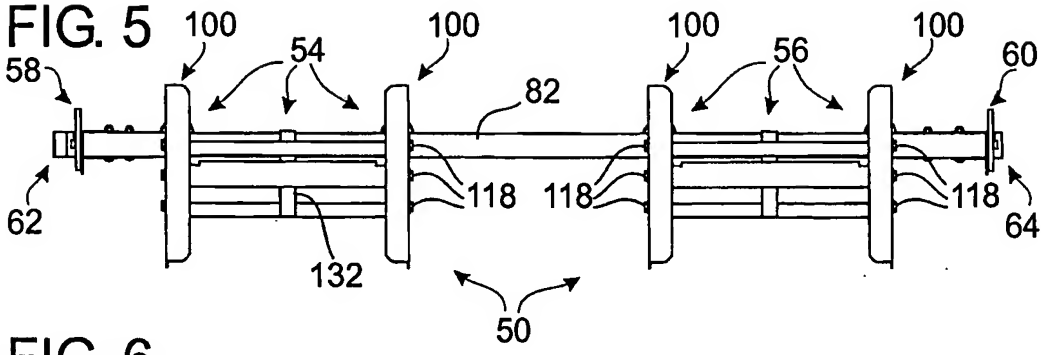

FIG. 6

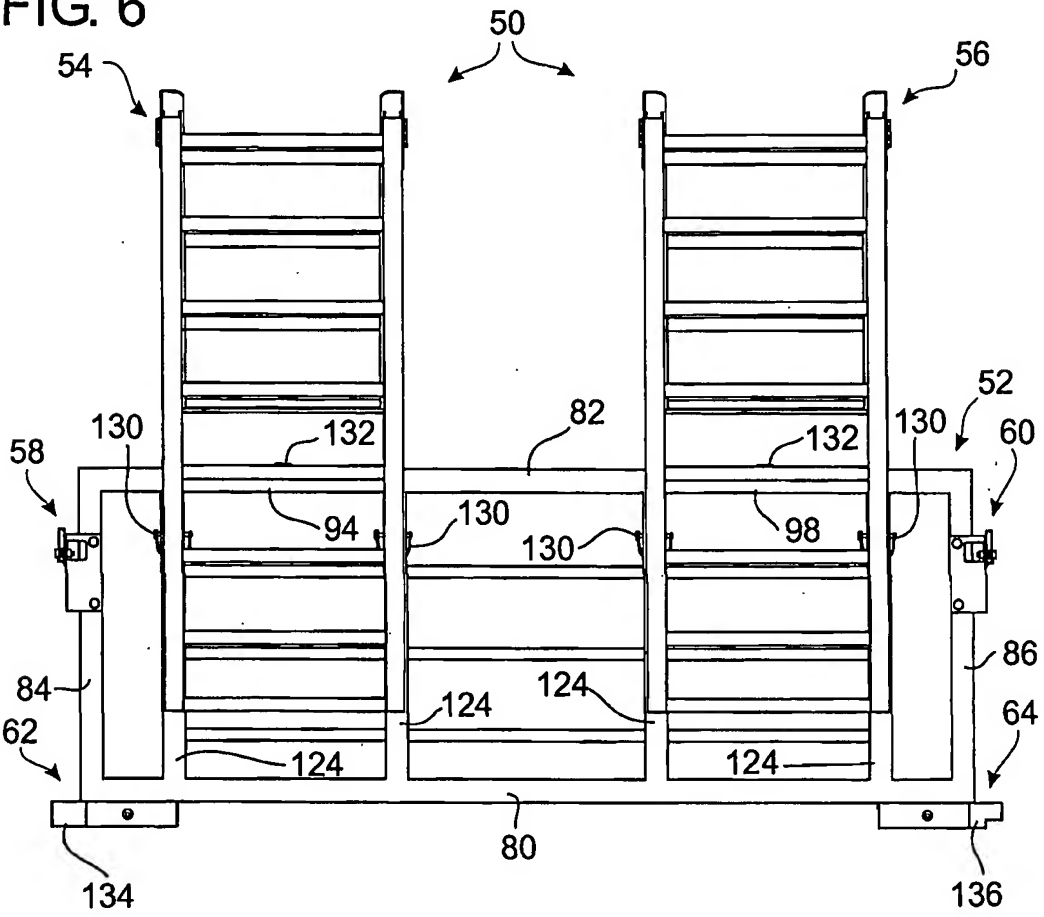

FIG. 7

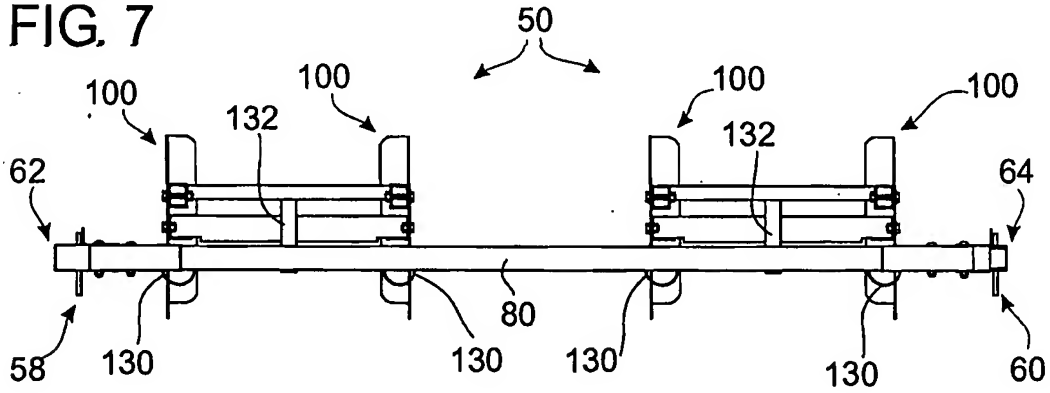

FIG. 8

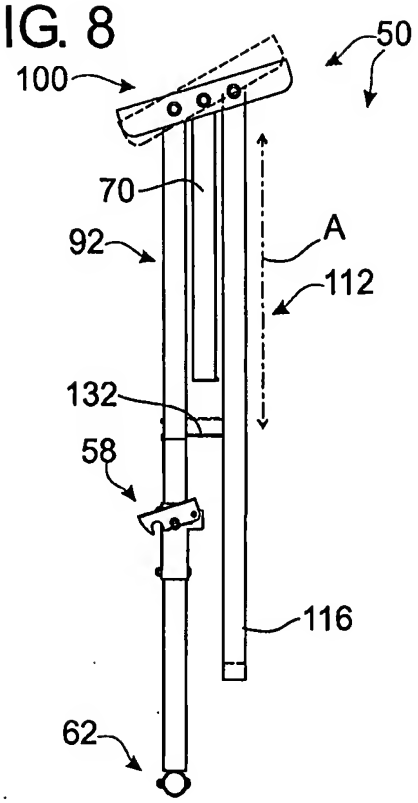

FIG. 9

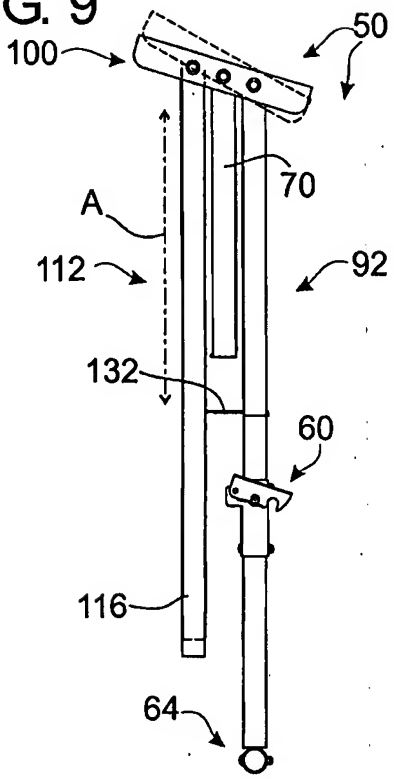

FIG. 10

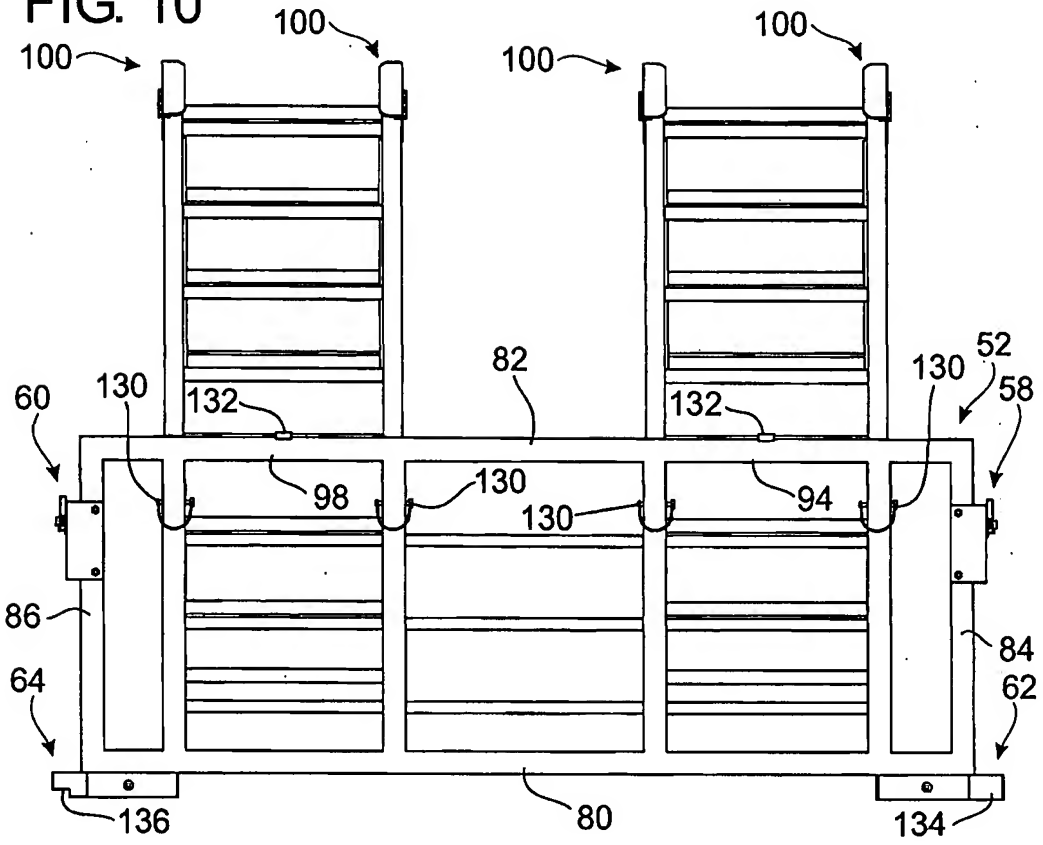

FIG. 11

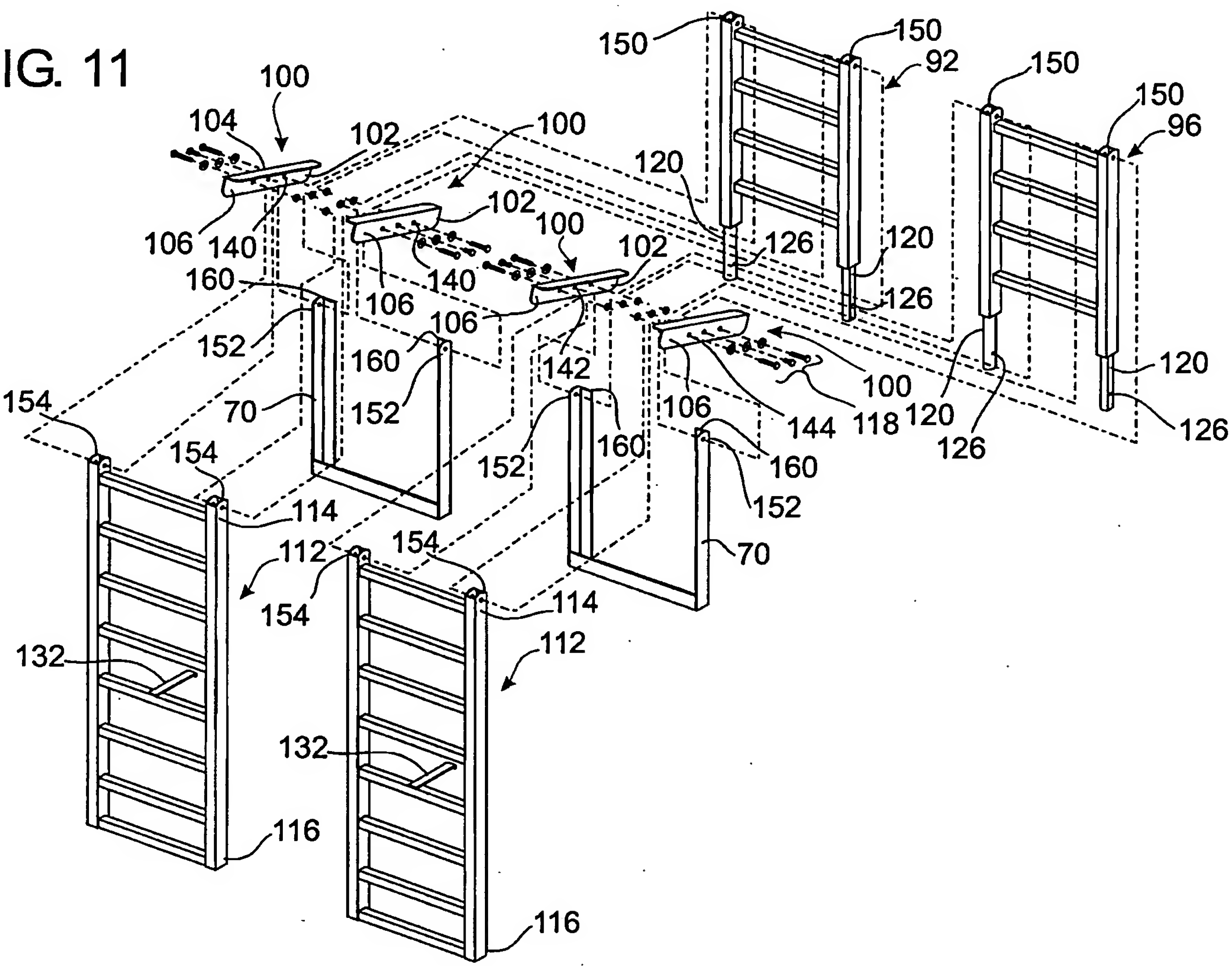

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FIG. 12

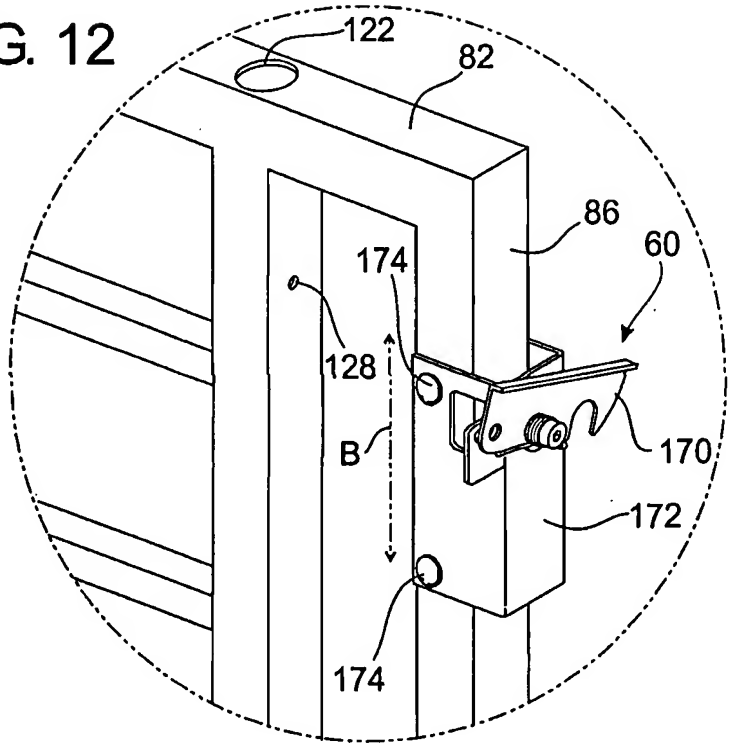
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FIG. 13

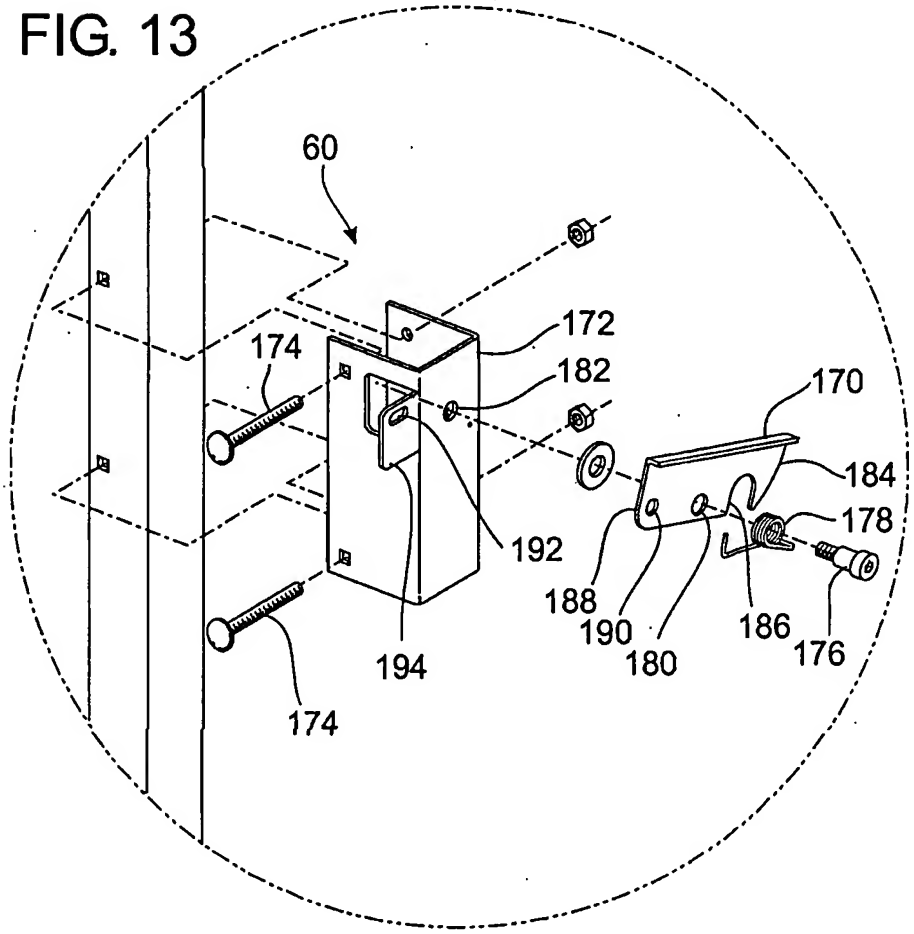
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FIG. 14

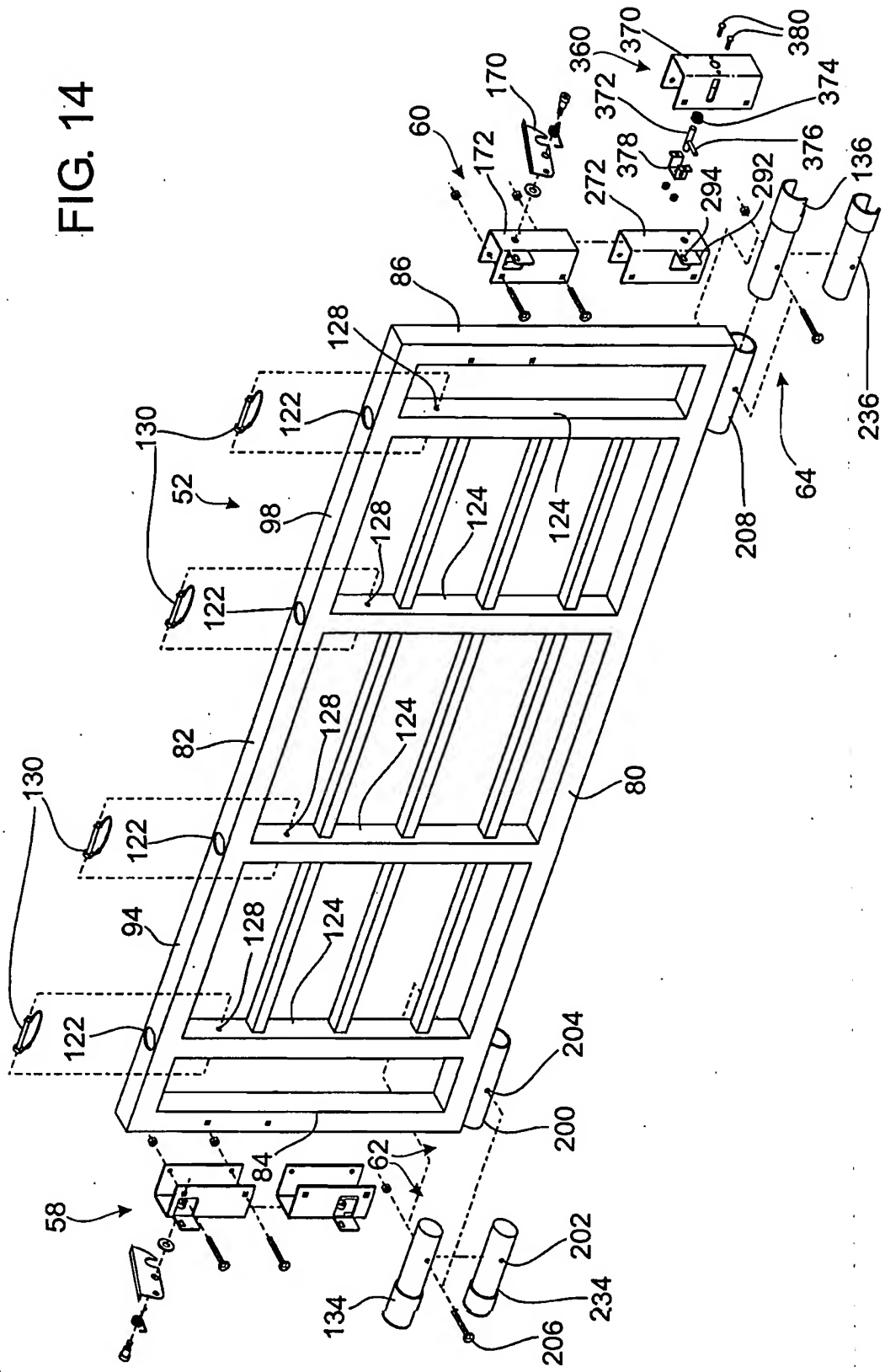
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FIG. 15

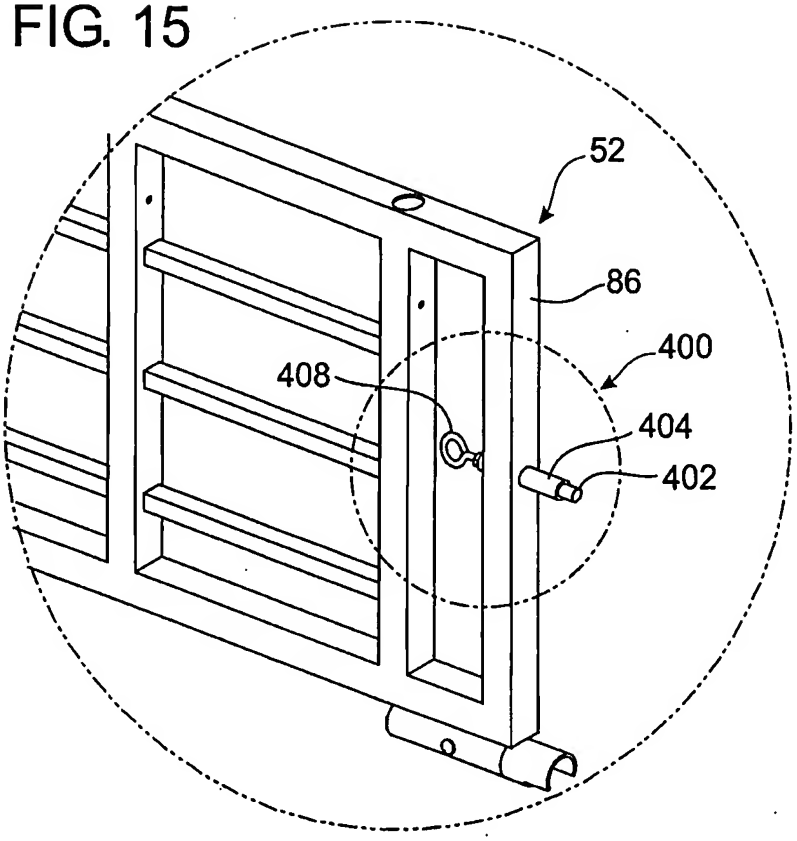


FIG. 16

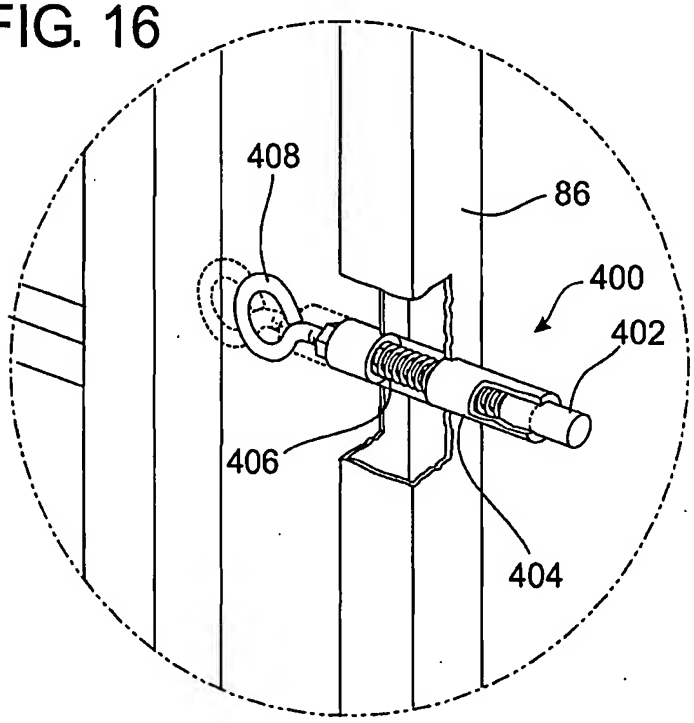
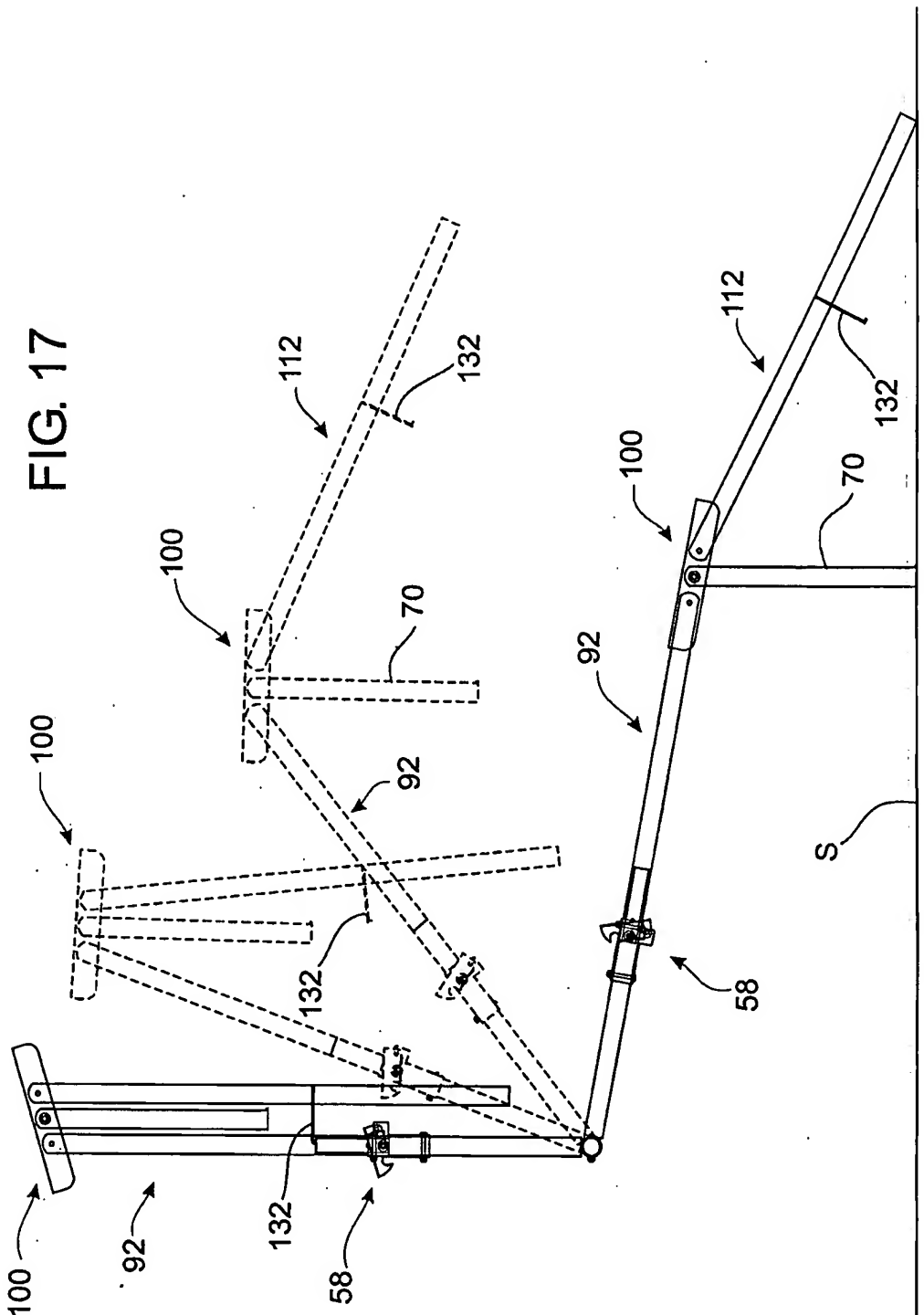


FIG. 17



Substitute Specification
With Highlights

Pickup Tailgate Loading Ramp

George M. Huggins, Inventor

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] This is a continuation-in-part of co-pending application Serial No. 09/750,498 filed on December 29, 2000. This invention relates to a pickup tailgate loading ramp, and more particularly, but not by way of limitation, to a loading ramp for use in conjunction with a pickup truck, wherein the tailgate ramp of the present invention replaces the normal pickup truck tailgate. The tailgate ramp includes hinge assemblies and latching assemblies which cooperate with existing tailgate hardware to secure the tailgate ramp to the pickup truck. The terms pickup tailgate loading ramp and tailgate ramp, as used herein, refer to applicant's invention.

2. Discussion

[0002] Pickup trucks are well known, and their popularity continues to grow. They are used to carry a variety of cargo, including outdoor power equipment such as lawnmowers, garden tractors, all terrain vehicles, and golf carts. It is difficult, if not impossible, to load a riding lawnmower or an all terrain vehicle into the bed of a pickup truck when the truck is equipped with original equipment tailgate (sometimes also referred to as an endgate).

[0003] While ramps that also serve as tailgates are known for use on pickup trucks, the currently existing products have various disadvantages. Different pickup truck manufacturers use different latch mechanisms and different hinge assemblies for tailgates of different widths. Tailgate ramps were largely custom built for each model of each pickup truck in order to properly locate the locking mechanism at a proper height.

[0004] Moreover, most convertible endgates were relatively heavy, difficult to attach or remove, and difficult to deploy in a load position. Many of the latch mechanisms for tailgate ramps were difficult to operate.

[0005] Although pickup tailgate ramps are known in the art, until now no tailgate ramp has been suited both for supporting substantial loads such as all terrain vehicles, garden tractors, golf carts, and other recreational devices and also for easy installation and removal.

SUMMARY OF THE INVENTION

[0006] Applicant's invention provides a combination tailgate and loading ramp for pickup trucks. A rectangular tailgate section is rigidly attached to an upper ramp section, whose lower end is pivotally attached to a linkage member. A support member and a lower ramp section are also attached to the linkage member to form a strong but lightweight ramp from the road surface to the bed of the pickup truck.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] Figure 1 shows the pickup tailgate loading ramp according to the present wherein the tailgate ramp is deployed in a vertical (i.e., stored) position.

[0008] Figure 2 shows the pickup tailgate loading ramp shown in Figure 1 wherein the tailgate ramp is deployed in a load position.

[0009] Figure 3 is an enlarged detailed view of the pickup tailgate loading ramp shown in Figures 1 and 2.

[0010] Figure 4 is a view of the tailgate ramp of Figures 1-3 wherein the left folding ramp assembly and the right folding ramp assembly are exploded upwardly away from the tailgate assembly.

[0011] Figure 5 is a top plan view of the tailgate ramp of Figures 1-3.

[0012] Figure 6 is a rear plan view of the tailgate ramp of Figures 1-3 from behind the pickup truck.

[0013] Figure 7 is a bottom plan view of the tailgate ramp of Figures 1-3.

[0014] Figure 8 is a left plan view of the left folding ramp assembly.

[0015] Figure 9 is a right plan view of the right folding ramp assembly.

[0016] Figure 10 is a front plan view of the tailgate ramp of Figures 1-3.

[0017] Figure 11 is an exploded view of the left folding ramp assembly and the right folding ramp assembly.

[0018] Figure 12 is a closeup view of the right latch assembly of the tailgate ramp shown in Figures 1-3.

[0019] Figure 13 is an exploded view of the right latch assembly shown in Figure 12.

[0020] Figure 14 is an exploded view of the tailgate assembly, the left latch assembly, the right latch assembly, the left hinge assembly, and the right hinge assembly, all as shown in Figures 1-3, together with alternate latch assemblies and alternate hinge assemblies according to the present invention.

[0021] Figure 15 shows still another latch assembly according to the present invention.

[0022] Figure 16 is an enlarged view of the latch assembly of Figure 15 with a portion of the tailgate assembly cut away.

[0023] Figure 17 illustrates the movement of the tailgate ramp of Figures 1-3 from the vertical (i.e., stored) position shown in Figure 1 to the load position shown in Figure 2.

DETAILED DESCRIPTION OF THE INVENTION

[0024] In the following description of the invention, like numerals and characters designate like elements throughout the figures of the drawings.

[0025] Referring now to the drawings generally and to Figure 1 in particular, a pickup tailgate loading ramp 50 in accordance with the present invention is mounted on the pickup truck T resting on a road surface S using existing tailgate hardware (not shown). The tailgate ramp 50 includes a tailgate assembly 52, a left folding ramp assembly 54, a right folding ramp assembly 56, a left latch assembly 58, a right latch assembly 60, a left hinge assembly 62, and a right hinge assembly 64. The tailgate ramp 50 of Figure 1 is shown in the vertical (i.e., storage) position.

[0026] Referring now to Figure 2, the tailgate loading ramp 50 is deployed in a load position so that the left folding ramp assembly 54 and the right folding ramp assembly 56 cooperate with the tailgate assembly 52 to create a continuous path from the surface S to the bed B of the pickup truck T. U-shaped support members 70 are attached to the left folding ramp assembly 54 and the right folding ramp assembly 56 (*see* Figure 3 and Figure 17).

[0027] Referring now to Figure 3, the tailgate loading ramp 50 is shown detached from the pickup truck T. The tailgate assembly 52 includes a horizontal rail 80 and a parallel horizontal rail 82 interconnected by left end rail 84 and right end rail 86, having lower end portions 88, 90, respectively. The left latch assembly 58 is attached to the left end rail 84 and the right latch assembly 60 is attached to the right end rail 86. The left latch assembly 58 and the right latch assembly 60 engage existing tailgate latching pins P (*see* Figure 2, only one shown) to secure the tailgate loading ramp 50 in the vertical position.

[0028] Still referring to Figure 3, the left hinge assembly 62 is attached to the horizontal rail 80 adjacent the lower end portion 88 of the left end rail 84. The right hinge assembly 64 is attached to the horizontal rail 80 adjacent the lower end portion 90 of the right end rail 86. The left and right hinge assemblies, 62, 64, pivotally engage hinge pins P (now shown), standard tailgate attachment hardware located adjacent the bed B of the pickup truck T.

[0029] Still referring to Figure 3, the left folding ramp assembly 54 includes an upper ramp section 92 attached at one end to a left end portion 94 of the parallel horizontal rail

82 (*see* Figures 4, 6, 10, and 14). The right folding ramp assembly 56 includes an upper ramp section 96 attached at one end to a right end portion 98 of the parallel horizontal rail 82 (*see* Figures 4, 6, 10, and 14). As used with respect to the folding ramp assemblies 54, 56, the term upper is used to indicate the structure so described is higher in elevation (and nearer the bed B of the pickup truck T) when the tailgate loading ramp 50 is deployed in the load position. Similarly, the term lower is used to indicate the structure so described is lower in elevation (and nearer the surface S on which the pickup truck T rests) when the tailgate loading ramp 50 is deployed in the load position.

[0030] Still referring to Figure 3, the other end of each of the upper ramp sections 92, 96 is pivotally attached to a pair of linkages 100. Each linkage 100 has an upper portion 102, an intermediate portion 104, and a lower portion 106. Each of the upper ramp sections 92, 96 has an upper portion 108 and a lower portion 110. The ends of the upper ramp sections 92, 96 adjacent the upper portions 108 of the upper ramp sections 92, 96 are rigidly connected to the parallel horizontal rail 82. The other ends of the upper ramp sections 92, 96, adjacent the lower portions 110 of the upper ramp sections 92, 96, are pivotally attached to the linkages 100 adjacent the upper portion of linkage 102.

[0031] Still referring to Figure 3, the ends of each of the U-shaped support members 70 are pivotally attached to the linkages 100 in the intermediate portion 104 of the linkages 100 by fasteners 118.

[0032] Still referring to Figure 3, each folding ramp section 54, 56 includes a lower ramp section 112 having an upper end 114 and a lower end 116. The upper end 114 of each lower ramp section 112 is attached to two linkages 100 adjacent the lower portions

of linkage 106 of the linkages 100. The lower end 116 of each lower ramp section 112 rests on the surface S when the tailgate ramp 50 is deployed in the load position.

[0033] Referring now to Figures 4-10, the left upper ramp section 92 and the right upper ramp section 96 are exploded upwardly from the parallel horizontal rail 82. Projections 120 extending from the upper end portions108 of the upper ramp sections 54, 56 are received through holes 122 in the parallel horizontal rail 82 and disposed within hollow frame members 124 of the tailgate assembly 52. When the projections 120 are disposed within the hollow frame members 124, horizontal bores 126 in the projections 120 mate with throughways 128 in the hollow frame members 124. Pins 130 secure the upper ramp sections 92, 96 to the tailgate assembly 52. Each fastener 130 extends through a throughway 128 and through the horizontal bore 126 in the projection 120.

[0034] Still referring to Figures 4-10, holders 132 secure lower ramp sections 112 to the upper ramp sections 92, 96 when the tailgate ramp 50 is in the vertical (i.e., stored) position (*see* Figures 8 and 9).

[0035] Still referring to Figures 4-10, the left hinge assembly 62 includes a hollow cylindrical member 134 which receives a left hinge pin attached to the left side of the pickup truck T adjacent the bed B. The right hinge assembly 64 includes a partially cutaway cylindrical member 136 which mates with a mating right hinge pin attached to the right side of the pickup truck T adjacent the bed B.

[0036] The hinge pin assemblies 62, 64 according to the present invention match the factory equipment on the pickup truck T. It will be understood by one skilled in the art that a variety of mating configurations are known in the art. Applicant's invention is

adaptable for use with any mating configuration which permits a tailgate to be easily removed and installed.

[0037] Referring now to Figures 8 and 9, an arrow A shows the direction of movement, in concert, of the left upper ramp portion 92 and the right upper ramp portion 96 as to raise the holder 132 which secures the

[0038] Referring now to Figure 11, the folding ramp assemblies of the present invention are shown in exploded view. Each linkage 100 has a bore 140 located adjacent the upper portion 102 of the linkage 100, a bore 142 located in the intermediate portion 104 of the linkage 100, and a bore 144 located adjacent the lower portion 106 of the linkage 100. The upper ramp section 92 is attached to two linkages 100 by means of fasteners 118 disposed through the bores 140 of two linkages 100 and through bores 150 located adjacent the upper portion 108 of the upper ramp section 92. Likewise the upper ramp section 96 is attached to two linkages 100 by fasteners 118 disposed through the bores 140 of the two linkages 100 and through bores 150 located adjacent the upper portion 108 of the upper ramp section 96.

[0039] Each of the U-shaped support members 70 is attached to two linkages 100 by fasteners 118 disposed through the bores 142 located in the intermediate portions 104 of the two linkages 100 and through bores 152 adjacent the ends of the U-shaped support members 70.

[0040] Each of the lower ramp sections 112 is attached to two linkages 100 by fasteners 118 disposed through the bores 144 located adjacent the lower portion of the

linkages 100 and through bores 154 adjacent the upper ends 114 of the lower ramp sections 112.

[0041] Referring now to Figures 12 and 13, the right latch assembly 60 according to the present invention is attached to the right end rail 86 of the tailgate assembly 52. A spring-biased latching arm 170 is attached to a latch support 172 attached to the right end rail 86 of the tailgate assembly 52 by latch support mounting security bolts 174. The spring-biased latching arm 170 rocks on a pivot bolt 176 which extends through a biasing spring 178 and through a bore 180 in the latching arm 170, and through a bore 182 in the latch support 172. One end 184 of the latching arm 170 includes a cutout 186 which engages the tailgate latching pin P provided as standard equipment on the pickup truck T (*see* Figure 2). The other end 188 of the latching arm 170 includes a bore 190 which mates with a bore 192 in a tab portion 194 of the latch support 172 when the tailgate ramp 50 according to the present invention is in the vertical (i.e., storage) position. The latch support 172 is mounted at a convenient location along arrow B on the right end rail 86 of the tailgate assembly 52.

[0042] Referring now to Figure 14, the left hinge assembly 62 consists of a hollow cylindrical member 134 disposed within a first tubular member 200 attached to the horizontal rail 80 of the tailgate assembly 52. The cylindrical member 134 has a transverse bore 202 which mates with a transverse bore 204 in the tubular member 200. A fastener 206 extends through the cylindrical member transverse bore 202 and the mating tubular member transverse bore 204 and thereby secures the hollow cylindrical member 134 within the tubular member 200.

[0043] Still referring to Figure 14, the right latch assembly 64 consists of a partially cutaway hollow cylindrical member 136 secured in a second tubular member 208 attached to the horizontal rail 80 distal from the tubular member 200.

[0044] Still referring to Figure 14, a hollow cylindrical member 234 having a length less than the length of the hollow cylindrical member 134 and a partially cutaway hollow cylindrical member 236 having a length less than the length of the partially cutaway hollow cylindrical member 136 permits the tailgate assembly 52 to be adapted for use in a pickup truck having a narrower tailgate width.

[0045] Ford, General Motors, and Daimler-Chrysler pickup trucks for model years 1999 through 2004 have similar tailgate latching mechanisms and similar hinge assemblies, but the position of the latching pin P and the width of the tailgate vary between the three manufacturers. It will be understood by one skilled in the art that the latch assembly 58, 60 and the hinge assembly 62, 64 of the present invention permit the adaptation of a single tailgate assembly 52 to any of the three manufacturers.

[0046] Still referring to Figure 14, another latch support 272 includes a tab 292 having a bore 294 wherein the tab 292 is located near the bottom of the latch support 272. The latch support 272 facilitates the adaptation of the tailgate ramp 50 to a changed location of the latch pin P without drilling additional holes in the end rail 86 of the tailgate assembly 52.

[0047] Still referring to Figure 14, another latch assembly 360 permits use of the tailgate assembly 52 of the present invention with Ford, General Motors, and Daimler-Chrysler pickup trucks for model years prior to 1999. A latch support 370 containing a

spring-loaded latch pin 372 is mounted on the rail 86 of the tailgate assembly 52. A spring 374 biases the latch pin 372 in a distended position to engage a standard latch pin receiver in the pickup truck. A thumb lever 376 permits temporary disengagement of the latch pin 372 from the latch pin receiver for deployment of the tailgate ramp 50 in the load position. A backstop 378 is secured to the latch support 370 by fasteners 380 to limit travel of the latch pin 372 in the biased direction.

[0048] Referring now to Figures 15 and 16, shown therein is another latch assembly 400 for use according to the present tailgate ramp invention in Ford, General Motors, and Daimler-Chrysler pickup trucks for model years prior to 1999. A spring-loaded pull plunger 402 is housed in a cylindrical barrel 404. A spring 406 biases the plunger 402 in an extended position so the plunger 402 is disposed within the standard-equipment pickup truck latch pin receiver. A finger loop 408 permits manual withdrawal of the plunger 402 from the latch pin receiver.

[0049] Referring now to Figure 17, a left plan view of the tailgate ramp according to the present invention shows the operation of applicant's invention. Movement of the lower ramp section 112 along arrow A permits disengagement of the holder 132 from the upper ramp section 92. As the lower ramp section 112 is pulled outwardly and downward, the U-shaped support member 50, the upper ramp section 92, and the lower ramp section 112 pivot at their points of attachment to the linkage 100 so that, when fully extended, the tailgate ramp 50 of the present invention provides a ramp from the road surface S to the bed B of the pickup truck T. The U-shaped support member 70 provides support for both

the upper ramp section 92 and the lower ramp section 112 by virtue of their common connection to different points of attachment on the linkage 100.

[0050] The foregoing descriptions of specific embodiments of the present invention have been presented for purposes of illustration and description. They are not intended to be exhaustive or to limit the invention to the precise forms disclosed, and obviously many modifications and variations are possible in light of the above teaching. The embodiments were chosen and described in order to best explain the principles of the invention and its practical application, to thereby enable others skilled in the art to best utilize the invention and various embodiments with various modifications as are suited to the particular use contemplated. It is intended that the scope of the invention be defined by the claims appended hereto and their equivalents.

CLAIMS

I claim:

1. A pickup tailgate loading ramp for replacement of a standard pickup tailgate attached to the pickup by standard-equipment tailgate hardware, wherein said pickup tailgate loading ramp is adjustable between a vertical position when said pickup tailgate loading ramp is not being used for loading and a load position for moving materials and equipment from the road surface into the bed of the pickup truck, wherein the standard-equipment pickup tailgate hardware includes two latch pins and two hinge pins, said pickup tailgate loading ramp comprising:

a generally rectangular tailgate assembly having a first horizontal rail, an opposed second horizontal rail, and first and second end rails;

first and second hinge assemblies, wherein said first and second hinge assemblies are attached to said first horizontal rail and hingedly connect said first horizontal rail to said hinge pins;

first and second latch assemblies, wherein said first latch assembly is attached to said first end rail and said second latch assembly is attached to said second end rail, so that, when said pickup tailgate loading ramp is in the vertical position said first and second latch assemblies engage the standard-equipment latch pins and secure said pickup tailgate loading ramp to the pickup truck;

at least one folding ramp assembly, said folding ramp assembly further comprising;

an upper ramp section having an upper end and a lower end, said upper end of said upper ramp section being rigidly attached to said opposed horizontal rail of said tailgate section ;

a lower ramp section having an upper end and a lower end;

a U-shaped support member; and

a linkage member, said linkage member being characterized as having an upper portion, an intermediate portion, and a lower portion, said upper ramp section being pivotally attached to said upper portion of said linkage member, said support member being attached to said intermediate portion of said linkage member, and said lower ramp section being pivotally attached to said lower portion of said linkage member;

so that, as said tailgate assembly is rotated on said first and second hinge assemblies, said upper ramp section and said lower ramp section are extended outwardly and down from the pickup truck until said lower end of said lower ramp section is in contact with the road surface and a ramp is formed for moving materials from the road surface to the bed of the pickup truck.

ABSTRACT

A tailgate and loading ramp for pickup trucks includes a rectangular tailgate section rigidly attached to an upper ramp section. The lower end of the upper ramp section is pivotally attached to a linkage member. A support member and a lower ramp section are also attached to the linkage member to form a strong but lightweight ramp from the road surface to the bed of the pickup truck.

Substitute Specification
Without Highlights

Pickup Tailgate Loading Ramp

George M. Huggins, Inventor

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] **This is a continuation-in-part of co-pending application Serial No. 09/750,498 filed on December 29, 2000.** This invention relates to a pickup tailgate loading ramp, and more particularly, but not by way of limitation, to a loading ramp for use in conjunction with a pickup truck, wherein the tailgate ramp of the present invention replaces the normal pickup truck tailgate. The tailgate ramp includes hinge assemblies and latching assemblies which cooperate with existing tailgate hardware to secure the tailgate ramp to the pickup truck. The terms pickup tailgate loading ramp and tailgate ramp, as used herein, refer to applicant's invention.

2. Discussion

[0002] Pickup trucks are well known, and their popularity continues to grow. They are used to carry a variety of cargo, including outdoor power equipment such as lawnmowers, garden tractors, all terrain vehicles, and golf carts. It is difficult, if not impossible, to load a riding lawnmower or an all terrain vehicle into the bed of a pickup truck when the truck is equipped with original equipment tailgate (sometimes also referred to as an endgate).

[0003] While ramps that also serve as tailgates are known for use on pickup trucks, the currently existing products have various disadvantages. Different pickup truck manufacturers use different latch mechanisms and different hinge assemblies for tailgates of different widths. Tailgate ramps were largely custom built for each model of each pickup truck in order to properly locate the locking mechanism at a proper height.

[0004] Moreover, most convertible endgates were relatively heavy, difficult to attach or remove, and difficult to deploy in a load position. Many of the latch mechanisms for tailgate ramps were difficult to operate.

[0005] Although pickup tailgate ramps are known in the art, until now no tailgate ramp has been suited both for supporting substantial loads such as all terrain vehicles, garden tractors, golf carts, and other recreational devices and also for easy installation and removal.

SUMMARY OF THE INVENTION

[0006] Applicant's invention provides a combination tailgate and loading ramp for pickup trucks. A rectangular tailgate section is rigidly attached to an upper ramp section, whose lower end is pivotally attached to a linkage member. A support member and a lower ramp section are also attached to the linkage member to form a strong but lightweight ramp from the road surface to the bed of the pickup truck.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] Figure 1 shows the pickup tailgate loading ramp according to the present wherein the tailgate ramp is deployed in a vertical (i.e., stored) position.

[0008] Figure 2 shows the pickup tailgate loading ramp shown in Figure 1 wherein the tailgate ramp is deployed in a load position.

[0009] Figure 3 is an enlarged detailed view of the pickup tailgate loading ramp shown in Figures 1 and 2.

[0010] Figure 4 is a view of the tailgate ramp of Figures 1-3 wherein the left folding ramp assembly and the right folding ramp assembly are exploded upwardly away from the tailgate assembly.

[0011] Figure 5 is a top plan view of the tailgate ramp of Figures 1-3.

[0012] Figure 6 is a rear plan view of the tailgate ramp of Figures 1-3 from behind the pickup truck.

[0013] Figure 7 is a bottom plan view of the tailgate ramp of Figures 1-3.

[0014] Figure 8 is a left plan view of the left folding ramp assembly.

[0015] Figure 9 is a right plan view of the right folding ramp assembly.

[0016] Figure 10 is a front plan view of the tailgate ramp of Figures 1-3.

[0017] Figure 11 is an exploded view of the left folding ramp assembly and the right folding ramp assembly.

[0018] Figure 12 is a closeup view of the right latch assembly of the tailgate ramp shown in Figures 1-3.

[0019] Figure 13 is an exploded view of the right latch assembly shown in Figure 12.

[0020] Figure 14 is an exploded view of the tailgate assembly, the left latch assembly, the right latch assembly, the left hinge assembly, and the right hinge assembly, all as shown in Figures 1-3, together with alternate latch assemblies and alternate hinge assemblies according to the present invention.

[0021] Figure 15 shows still another latch assembly according to the present invention.

[0022] Figure 16 is an enlarged view of the latch assembly of Figure 15 with a portion of the tailgate assembly cut away.

[0023] Figure 17 illustrates the movement of the tailgate ramp of Figures 1-3 from the vertical (i.e., stored) position shown in Figure 1 to the load position shown in Figure 2.

DETAILED DESCRIPTION OF THE INVENTION

[0024] In the following description of the invention, like numerals and characters designate like elements throughout the figures of the drawings.

[0025] Referring now to the drawings generally and to Figure 1 in particular, a pickup tailgate loading ramp 50 in accordance with the present invention is mounted on the pickup truck T resting on a road surface S using existing tailgate hardware (not shown). The tailgate ramp 50 includes a tailgate assembly 52, a left folding ramp assembly 54, a right folding ramp assembly 56, a left latch assembly 58, a right latch assembly 60, a left hinge assembly 62, and a right hinge assembly 64. The tailgate ramp 50 of Figure 1 is shown in the vertical (i.e., storage) position.

[0026] Referring now to Figure 2, the tailgate loading ramp 50 is deployed in a load position so that the left folding ramp assembly 54 and the right folding ramp assembly 56 cooperate with the tailgate assembly 52 to create a continuous path from the surface S to the bed B of the pickup truck T. U-shaped support members 70 are attached to the left folding ramp assembly 54 and the right folding ramp assembly 56 (*see* Figure 3 and Figure 17).

[0027] Referring now to Figure 3, the tailgate loading ramp 50 is shown detached from the pickup truck T. The tailgate assembly 52 includes a horizontal rail 80 and a parallel horizontal rail 82 interconnected by left end rail 84 and right end rail 86, having lower end portions 88, 90, respectively. The left latch assembly 58 is attached to the left end rail 84 and the right latch assembly 60 is attached to the right end rail 86. The left latch assembly 58 and the right latch assembly 60 engage existing tailgate latching pins P (*see* Figure 2, only one shown) to secure the tailgate loading ramp 50 in the vertical position.

[0028] Still referring to Figure 3, the left hinge assembly 62 is attached to the horizontal rail 80 adjacent the lower end portion 88 of the left end rail 84. The right hinge assembly 64 is attached to the horizontal rail 80 adjacent the lower end portion 90 of the right end rail 86. The left and right hinge assemblies, 62, 64, pivotally engage hinge pins P (now shown), standard tailgate attachment hardware located adjacent the bed B of the pickup truck T.

[0029] Still referring to Figure 3, the left folding ramp assembly 54 includes an upper ramp section 92 attached at one end to a left end portion 94 of the parallel horizontal rail

82 (*see* Figures 4, 6, 10, and 14). The right folding ramp assembly 56 includes an upper ramp section 96 attached at one end to a right end portion 98 of the parallel horizontal rail 82 (*see* Figures 4, 6, 10, and 14). As used with respect to the folding ramp assemblies 54, 56, the term upper is used to indicate the structure so described is higher in elevation (and nearer the bed B of the pickup truck T) when the tailgate loading ramp 50 is deployed in the load position. Similarly, the term lower is used to indicate the structure so described is lower in elevation (and nearer the surface S on which the pickup truck T rests) when the tailgate loading ramp 50 is deployed in the load position.

[0030] Still referring to Figure 3, the other end of each of the upper ramp sections 92, 96 is pivotally attached to a pair of linkages 100. Each linkage 100 has an upper portion 102, an intermediate portion 104, and a lower portion 106. Each of the upper ramp sections 92, 96 has an upper portion 108 and a lower portion 110. The ends of the upper ramp sections 92, 96 adjacent the upper portions 108 of the upper ramp sections 92, 96 are rigidly connected to the parallel horizontal rail 82. The other ends of the upper ramp sections 92, 96, adjacent the lower portions 110 of the upper ramp sections 92, 96, are pivotally attached to the linkages 100 adjacent the upper portion of linkage 102.

[0031] Still referring to Figure 3, the ends of each of the U-shaped support members 70 are pivotally attached to the linkages 100 in the intermediate portion 104 of the linkages 100 by fasteners 118.

[0032] Still referring to Figure 3, each folding ramp section 54, 56 includes a lower ramp section 112 having an upper end 114 and a lower end 116. The upper end 114 of each lower ramp section 112 is attached to two linkages 100 adjacent the lower portions

of linkage 106 of the linkages 100. The lower end 116 of each lower ramp section 112 rests on the surface S when the tailgate ramp 50 is deployed in the load position.

[0033] Referring now to Figures 4-10, the left upper ramp section 92 and the right upper ramp section 96 are exploded upwardly from the parallel horizontal rail 82. Projections 120 extending from the upper end portions108 of the upper ramp sections 54, 56 are received through holes 122 in the parallel horizontal rail 82 and disposed within hollow frame members 124 of the tailgate assembly 52. When the projections 120 are disposed within the hollow frame members 124, horizontal bores 126 in the projections 120 mate with throughways 128 in the hollow frame members 124. Pins 130 secure the upper ramp sections 92, 96 to the tailgate assembly 52. Each fastener 130 extends through a throughway 128 and through the horizontal bore 126 in the projection 120.

[0034] Still referring to Figures 4-10, holders 132 secure lower ramp sections 112 to the upper ramp sections 92, 96 when the tailgate ramp 50 is in the vertical (i.e., stored) position (*see* Figures 8 and 9).

[0035] Still referring to Figures 4-10, the left hinge assembly 62 includes a hollow cylindrical member 134 which receives a left hinge pin attached to the left side of the pickup truck T adjacent the bed B. The right hinge assembly 64 includes a partially cutaway cylindrical member 136 which mates with a mating right hinge pin attached to the right side of the pickup truck T adjacent the bed B.

[0036] The hinge pin assemblies 62, 64 according to the present invention match the factory equipment on the pickup truck T. It will be understood by one skilled in the art that a variety of mating configurations are known in the art. Applicant's invention is

adaptable for use with any mating configuration which permits a tailgate to be easily removed and installed.

[0037] Referring now to Figures 8 and 9, an arrow A shows the direction of movement, in concert, of the left upper ramp portion 92 and the right upper ramp portion 96 as to raise the holder 132 which secures the

[0038] Referring now to Figure 11, the folding ramp assemblies of the present invention are shown in exploded view. Each linkage 100 has a bore 140 located adjacent the upper portion 102 of the linkage 100, a bore 142 located in the intermediate portion 104 of the linkage 100, and a bore 144 located adjacent the lower portion 106 of the linkage 100. The upper ramp section 92 is attached to two linkages 100 by means of fasteners 118 disposed through the bores 140 of two linkages 100 and through bores 150 located adjacent the upper portion 108 of the upper ramp section 92. Likewise the upper ramp section 96 is attached to two linkages 100 by fasteners 118 disposed through the bores 140 of the two linkages 100 and through bores 150 located adjacent the upper portion 108 of the upper ramp section 96.

[0039] Each of the U-shaped support members 70 is attached to two linkages 100 by fasteners 118 disposed through the bores 142 located in the intermediate portions 104 of the two linkages 100 and through bores 152 adjacent the ends of the U-shaped support members 70.

[0040] Each of the lower ramp sections 112 is attached to two linkages 100 by fasteners 118 disposed through the bores 144 located adjacent the lower portion of the

linkages 100 and through bores 154 adjacent the upper ends 114 of the lower ramp sections 112.

[0041] Referring now to Figures 12 and 13, the right latch assembly 60 according to the present invention is attached to the right end rail 86 of the tailgate assembly 52. A spring-biased latching arm 170 is attached to a latch support 172 attached to the right end rail 86 of the tailgate assembly 52 by latch support mounting security bolts 174. The spring-biased latching arm 170 rocks on a pivot bolt 176 which extends through a biasing spring 178 and through a bore 180 in the latching arm 170, and through a bore 182 in the latch support 172. One end 184 of the latching arm 170 includes a cutout 186 which engages the tailgate latching pin P provided as standard equipment on the pickup truck T (*see* Figure 2). The other end 188 of the latching arm 170 includes a bore 190 which mates with a bore 192 in a tab portion 194 of the latch support 172 when the tailgate ramp 50 according to the present invention is in the vertical (i.e., storage) position. The latch support 172 is mounted at a convenient location along arrow B on the right end rail 86 of the tailgate assembly 52.

[0042] Referring now to Figure 14, the left hinge assembly 62 consists of a hollow cylindrical member 134 disposed within a first tubular member 200 attached to the horizontal rail 80 of the tailgate assembly 52. The cylindrical member 134 has a transverse bore 202 which mates with a transverse bore 204 in the tubular member 200. A fastener 206 extends through the cylindrical member transverse bore 202 and the mating tubular member transverse bore 204 and thereby secures the hollow cylindrical member 134 within the tubular member 200.

[0043] Still referring to Figure 14, the right latch assembly 64 consists of a partially cutaway hollow cylindrical member 136 secured in a second tubular member 208 attached to the horizontal rail 80 distal from the tubular member 200.

[0044] Still referring to Figure 14, a hollow cylindrical member 234 having a length less than the length of the hollow cylindrical member 134 and a partially cutaway hollow cylindrical member 236 having a length less than the length of the partially cutaway hollow cylindrical member 136 permits the tailgate assembly 52 to be adapted for use in a pickup truck having a narrower tailgate width.

[0045] Ford, General Motors, and Daimler-Chrysler pickup trucks for model years 1999 through 2004 have similar tailgate latching mechanisms and similar hinge assemblies, but the position of the latching pin P and the width of the tailgate vary between the three manufacturers. It will be understood by one skilled in the art that the latch assembly 58, 60 and the hinge assembly 62, 64 of the present invention permit the adaptation of a single tailgate assembly 52 to any of the three manufacturers.

[0046] Still referring to Figure 14, another latch support 272 includes a tab 292 having a bore 294 wherein the tab 292 is located near the bottom of the latch support 272. The latch support 272 facilitates the adaptation of the tailgate ramp 50 to a changed location of the latch pin P without drilling additional holes in the end rail 86 of the tailgate assembly 52.

[0047] Still referring to Figure 14, another latch assembly 360 permits use of the tailgate assembly 52 of the present invention with Ford, General Motors, and Daimler-Chrysler pickup trucks for model years prior to 1999. A latch support 370 containing a

spring-loaded latch pin 372 is mounted on the rail 86 of the tailgate assembly 52. A spring 374 biases the latch pin 372 in a distended position to engage a standard latch pin receiver in the pickup truck. A thumb lever 376 permits temporary disengagement of the latch pin 372 from the latch pin receiver for deployment of the tailgate ramp 50 in the load position. A backstop 378 is secured to the latch support 370 by fasteners 380 to limit travel of the latch pin 372 in the biased direction.

[0048] Referring now to Figures 15 and 16, shown therein is another latch assembly 400 for use according to the present tailgate ramp invention in Ford, General Motors, and Daimler-Chrysler pickup trucks for model years prior to 1999. A spring-loaded pull plunger 402 is housed in a cylindrical barrel 404. A spring 406 biases the plunger 402 in an extended position so the plunger 402 is disposed within the standard-equipment pickup truck latch pin receiver. A finger loop 408 permits manual withdrawal of the plunger 402 from the latch pin receiver.

[0049] Referring now to Figure 17, a left plan view of the tailgate ramp according to the present invention shows the operation of applicant's invention. Movement of the lower ramp section 112 along arrow A permits disengagement of the holder 132 from the upper ramp section 92. As the lower ramp section 112 is pulled outwardly and downward, the U-shaped support member 50, the upper ramp section 92, and the lower ramp section 112 pivot at their points of attachment to the linkage 100 so that, when fully extended, the tailgate ramp 50 of the present invention provides a ramp from the road surface S to the bed B of the pickup truck T. The U-shaped support member 70 provides support for both

the upper ramp section 92 and the lower ramp section 112 by virtue of their common connection to different points of attachment on the linkage 100.

[0050] The foregoing descriptions of specific embodiments of the present invention have been presented for purposes of illustration and description. They are not intended to be exhaustive or to limit the invention to the precise forms disclosed, and obviously many modifications and variations are possible in light of the above teaching. The embodiments were chosen and described in order to best explain the principles of the invention and its practical application, to thereby enable others skilled in the art to best utilize the invention and various embodiments with various modifications as are suited to the particular use contemplated. It is intended that the scope of the invention be defined by the claims appended hereto and their equivalents.

CLAIMS

I claim:

1. A pickup tailgate loading ramp for replacement of a standard pickup tailgate attached to the pickup by standard-equipment tailgate hardware, wherein said pickup tailgate loading ramp is adjustable between a vertical position when said pickup tailgate loading ramp is not being used for loading and a load position for moving materials and equipment from the road surface into the bed of the pickup truck, wherein the standard-equipment pickup tailgate hardware includes two latch pins and two hinge pins, said pickup tailgate loading ramp comprising:

a generally rectangular tailgate assembly having a first horizontal rail, an opposed second horizontal rail, and first and second end rails;

first and second hinge assemblies, wherein said first and second hinge assemblies are attached to said first horizontal rail and hingedly connect said first horizontal rail to said hinge pins;

first and second latch assemblies, wherein said first latch assembly is attached to said first end rail and said second latch assembly is attached to said second end rail, so that, when said pickup tailgate loading ramp is in the vertical position said first and second latch assemblies engage the standard-equipment latch pins and secure said pickup tailgate loading ramp to the pickup truck;

at least one folding ramp assembly, said folding ramp assembly further comprising:

an upper ramp section having an upper end and a lower end, said upper end of said upper ramp section being rigidly attached to said opposed horizontal rail of said tailgate section ;

a lower ramp section having an upper end and a lower end;

a U-shaped support member; and

a linkage member, said linkage member being characterized as having an upper portion, an intermediate portion, and a lower portion, said upper ramp section being pivotally attached to said upper portion of said linkage member, said support member being attached to said intermediate portion of said linkage member, and said lower ramp section being pivotally attached to said lower portion of said linkage member;

so that, as said tailgate assembly is rotated on said first and second hinge assemblies, said upper ramp section and said lower ramp section are extended outwardly and down from the pickup truck until said lower end of said lower ramp section is in contact with the road surface and a ramp is formed for moving materials from the road surface to the bed of the pickup truck.

ABSTRACT

A tailgate and loading ramp for pickup trucks includes a rectangular tailgate section rigidly attached to an upper ramp section. The lower end of the upper ramp section is pivotally attached to a linkage member. A support member and a lower ramp section are also attached to the linkage member to form a strong but lightweight ramp from the road surface to the bed of the pickup truck.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	**Huggins, George M.**	Art Group:	**3652**
App. No.:	**10/781,483**	Atty's D/N:	**HUG107**
For:	**Pickup Tailgate Loading Ramp**		

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

The following sections are being submitted for this INFORMATION DISCLOSURE STATEMENT:

1. Preliminary Statements.
2. FORM PTO/SB/08A (SUBSTITUTE FOR FORM PTO - 1449A/PTO).
3. FORM PTO/SB/08B (SUBSTITUTE FOR FORM 1449B/PTO).
4. Identification of Person Making This INFORMATION DISCLOSURE STATEMENT.

1. Preliminary Statements

Applicant submits herewith information of which he is aware, and which he believes may be material to the examination of this application and in respect of which there may be a duty to disclose in accordance with 37 C.F.R. § 1.56.

The filing of this INFORMATION DISCLOSURE STATEMENT shall not be construed as a representation that a search has been made. 37 C.F.R. § 1.97(g). The filing of this INFORMATION DISCLOSURE STATEMENT shall not be construed as an admission that the information cited is, or is considered to be, material to patentability as defined in 37 C.F.R. § 1.56(b) or that not other material information exists. 37 C.F.R. § 1.97(h). The filing of

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2. FORMS PTO/SB/08A & PTO/SB/08B

FORMS PTO/SB/08A & PTO SB/08B are attached to this INFORMATION DISCLOSURE STATEMENT.

3. Copies of Listed Information Items Accompanying This INFORMATION DISCLOSURE STATEMENT

- Pursuant to the Notice of August, 2003, copies of U.S. patents are NOT being supplied.
- Copies of Canadian patents listed on PTO/SB/08A are enclosed.

4. Identification of Person Making This INFORMATION DISCLOSURE STATEMENT

The person making this statement is the attorney who signs below on the basis of the information, supplied by the inventor, which has been reviewed by the attorney.

Respectfully submitted,

George M. Huggins, Applicant

Date: August 8, 2005

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ATTORNEY FOR APPLICANT

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Sheet 1 of 6

Complete if Known	
Application Number	10/781,483
Filing Date	February 17, 2004
First Named Inventor	Huggins, George
Art Unit	3652
Examiner Name	Charles Fox
Attorney Docket Number	HUG107

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
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		CA 2219754	04-30-1999	Cole, Leslie W.		
		CA 2028014	04-20-1992	Haskell, Robert		

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Complete if Known	
Application Number	10/781,483
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First Named Inventor	Huggins, George
Art Unit	3652
Examiner Name	Charles Fox
Attorney Docket Number	HUG107

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Art Unit	3652
Examiner Name	Charles Fox
Attorney Docket Number	HUG107

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Application Number	10/781,483
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First Named Inventor	Huggins, George
Art Unit	3652
Examiner Name	Charles Fox
Attorney Docket Number	HUG107

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
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(Use as many sheets as necessary)

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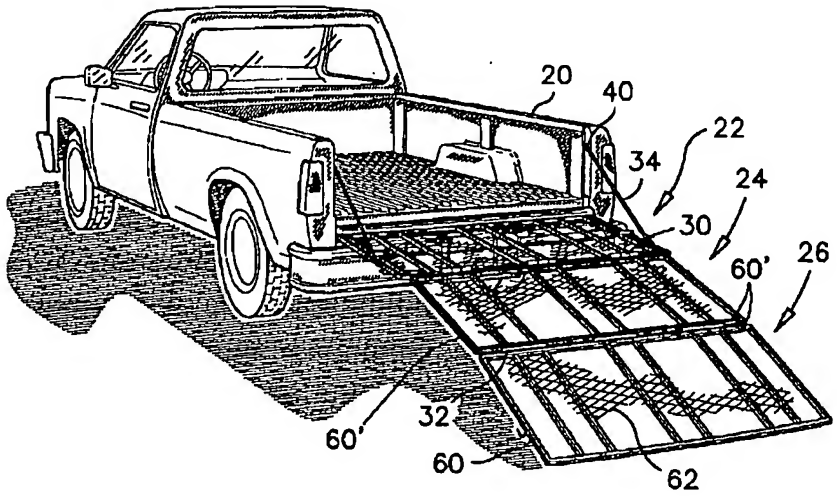
COLE, LESLIE W., CA

(74) Agent: THERIAULT, MARIO D., P.ENG.

(54) Titre : RAMPE DE HAYON REPLIABLE POUR CAMIONNETTES
(54) Title: FOLDABLE TAILGATE RAMP FOR PICKUP TRUCKS



(57) Abrégé/Abstract:
A foldable ramp having a first, second and third rectangular sections contiguous with each other and defining a ramp path having longitudinal and transverse axes. A first hinge group is affixed to both the first and second sections and a second hinge group is affixed to both the second and third sections. The first hinge group has a first axis of rotation on the upper side of the ramp path and extending across the longitudinal axis, and a first rotational range of slightly more than 180°. The second hinge group has a second axis of rotation on the under side of the ramp path and extending in a parallel alignment with the first axis of rotation, and a second rotational range of slightly less than 180°. The first and second hinge groups each have a central hinge and outside hinges, and stoppers on the central hinges to limit the rotation of the central hinges a few degrees less that the rotational range of the outside hinges. This configuration causes the ramp to arc longitudinally and transversely upwardly when deployed for increasing the moments of inertia of the ramp.

TITLE: FOLDABLE TAILGATE RAMP FOR PICKUP TRUCKS

FIELD OF THE INVENTION

This invention pertains to tailgate ramps for pickup trucks, and more particularly, it pertains to a multiple-section foldable tailgate ramp that is positional to define arcuate configurations along the longitudinal and transversal axes thereof.

BACKGROUND OF THE INVENTION

Many types of foldable tailgate ramp systems have been used in the past. In most designs, the objective was to increase a deployed length and strength of the ramp without unduly increasing the size of its structural members. This objective remains a primary requirement to any acceptable foldable ramp concept.

For reference purposes, the foldable tailgate ramps of the prior art are believed to belong to three broad groups. The first group utilizes longitudinal beams for stiffening a ramp in use; the second group uses trusses or mid-span legs to strengthen the hinges between each section of the ramp, and the third group uses the abutting edges of adjoining panels for preventing the hinges from folding when the ramp is extended.

Examples of tailgate ramps of the first group wherein longitudinal beams are used to strengthen a ramp, are disclosed in the following patent documents:

US Patent **5,540,474** issued on Jul. 30, 1996 to Richard T. Holland,
US Patent **5,752,800** issued on May 19, 1998 to Darryl Brincks et al.

In the first example, there is disclosed a tailgate ramp made in two sections that are hinged to one another. The ramp sections are constructed with marginal structural channel members and the panels are held in a planar alignment with each other by flat bars extending inside the channel members of both sections. In the second example, four ramp sections are maintained in a planar alignment with each other along an inclined path, by three support beams extending under the ramp, along the full length of the ramp.

In the second group of tailgate ramps of the prior art, the hinges are reinforced by inverted collapsible trusses mounted thereunder, or by foldable leg members extending from a mid-span portion of the ramp to the ground. Some examples of these designs are found in the following documents:

US Patent **3,976,209** issued on Aug. 24, 1976 to Edward E. Burton;
US Patent **4,571,144** issued on Feb. 18, 1986 to Donald C. Guidry et al.;
US Patent **4,795,304** issued on Jan. 3, 1989 to James D. Dudley;
US Patent **4,944,546** issued on Jul. 31, 1990 to William K. Keller;
US Patent **5,312,148** issued on May 17, 1994 to Alfred W. Morgan;
US Patent **5,342,105** issued on Aug. 30, 1994 to Mark R. Miles;
US Patent **5,791,717** issued on Aug. 11, 1998 to Terry Gene Reich et al.

In a third group of tailgate ramp systems, the rotation of the hinges between the panels and an associated sagging of the ramp under load are restricted by the abutment of the edges of adjoining panels, or by stopper

blocks acting upon the hinges. In this third group, the following examples are found.

US Patent **3,642,156** issued on Feb. 15, 1972 to Raymond A. Stenson;

US Patent **4,735,454** issued on Apr. 5, 1988 to John N. Bernard;

US Patent **5,133,584** issued on Jul. 28, 1992 to Dennis M. McCleary;

US Patent **5,156,432** issued on Oct. 20, 1992 to Dennis M. McCleary;

US Patent **5,273,335** issued on Dec. 28, 1993 to Philip Belnap et al.;

US Patent **5,287,579** issued on Feb. 22, 1994 to Orestes Estevez, Jr.

While it is generally known in the field of Mechanical Design that the stiffness of a structure is directly proportional to its moment of inertia, none of the above tailgate ramp systems has means for advantageously blocking the hinges between the panels of a tailgate ramp, for causing the ramp to arcuate upwardly when deployed, thereby increasing its moments of inertia. Although the tailgate ramps of the prior art deserve undeniable merits, there is no known prior art that suggests that a strategic blocking of the hinges between the panels of a foldable tailgate ramp can substantially increase the strength of this ramp.

SUMMARY OF THE INVENTION

In the present invention, however, there is provided a foldable tailgate ramp for installation on a pickup truck, and which combines light weight with a remarkable strength.

In accordance with one aspect of the present invention, there is provided a foldable ramp comprising a first, second and third rectangular sections contiguous with each other and defining a ramp path having an upper side, an under side, a longitudinal axis oriented between the first and

third sections, and a transversal dimension perpendicular to the longitudinal axis. The foldable ramp also has means for movably retaining and selectively steadying the first section thereof to a pickup truck.

There is also provided a first hinge group affixed to both the first and second sections for movably joining the first section to the second section. The first hinge group has a first rotational limit being defined by the positions of the first and second sections when the second section is laid against the first section. A second hinge group is affixed to both the second and third sections for movably joining the second section to the third section. The second hinge group has a second rotational limit being defined by the positions of the second and third sections when the third section is laid against the second section.

The first hinge group has a first axis of rotation on the upper side of the ramp path and extending across the longitudinal axis, and a first rotational range measured from the first rotational limit, of slightly more than 180^0. The second hinge group has a second axis of rotation on the under side of the ramp path and extending in a parallel alignment with the first axis of rotation, and a second rotational range measured from the second rotational limit, of slightly less than 180^0.

The principal advantage of this first aspect of the present invention is that the first, second and third sections are workable from a folded configuration wherein the first, second and third sections are laid over each other, to a deployed configuration wherein the ramp path is an upwardly arcuated pathway for stiffly supporting a vehicle moving thereon.

In accordance with another feature of the present invention, the first section is positional to make a reflex angle of between 188^0 to about 190^0 relative to the floor of a truck box, and the rotational ranges of the second and third sections are equivalent to the above reflex angle and to a mirror image of that reflex angle respectively. This feature has been found particularly advantageous for easily supporting a vehicle having a low undercarriage clearance.

In yet another feature of the present invention, there is provided a pair of link members which are connect-able between the first section and one of or both the second and third sections for retaining the second and third sections in a perpendicular alignment with the first section. Therefore, when the first section is held horizontally, and the second and third sections are held vertically by the link members, the foldable tailgate ramp is usable as a truck bed extension for supporting equipment longer than the truck's box.

In accordance with another feature, the first section of the foldable ramp has a round tubing with notches therein for pivotal connection to the tailgate attachment bosses on a pickup truck. Therefore, the foldable ramp is mountable to a pickup truck in replacement of a common tailgate.

In yet another feature of the present invention, the first hinge group comprises a pair of spaced-apart first outside hinges and a first central hinge disposed between the first outside hinges, and the second hinge group comprises a pair of spaced-apart second outside hinges and a second central hinge disposed between the second outside hinges. The first and second central hinges are disposed along the longitudinal axis of the ramp and the first and second outside hinges are disposed at a common distance from the longitudinal axis.

The first and second central hinges have stoppers for restricting a rotation thereof a few degrees less than a rotation of the first and second outside hinges respectively. Hence, when said ramp path is deployed, at least one of the sections is adapted to be arced transversely, and a moment of inertia thereof along the longitudinal axis is relatively increased.

In yet another feature, each section has a plurality of reinforcing members extending in a parallel alignment with the longitudinal axis, in coincidental alignment with the positions of the first and second central and outside hinges. These reinforcing members add longitudinal stiffness to each section, and to each hinge group when that hinged group is arced transversely.

In yet another aspect of the present invention, the third section of the ramp comprises an endmost transverse structural member relative to the ramp, and this endmost transverse structural member is arced away from the second hinge group for further promoting the aforesaid transverse arcing of the third section.

Still other features of the foldable ramp of the present invention comprises the fact that it is manufacturable with very light structural members relative to its supporting capacity. Accordingly, it is susceptible of a low cost of manufacture with regard to both materials and labour. It is then susceptible of low prices of sale to the consumer, thereby making such foldable ramp economically available to the public.

BRIEF DESCRIPTION OF THE DRAWINGS

One embodiment of this invention is illustrated in the accompanying drawings, in which like numerals denote like parts throughout the several views, and in which:

FIG. 1 is a perspective view of the tailgate ramp according to a preferred embodiment of the invention, mounted on a pickup truck;

FIG. 2 illustrates a side view of the tailgate ramp according to the preferred embodiment;

FIG. 3 is a side view of the tailgate ramp in a partially folded mode forming an extended truck bed;

FIG. 4 is a side view of the tailgate ramp in a folded configuration;

FIG. 5 is a plan view of the tailgate ramp according to the preferred embodiment;

FIG. 6 is a detail of the latch mechanism of the tailgate ramp, as seen along **line 6 in FIG. 5**;

FIG. 7 is a cross-section view of a hinge comprised in the first hinge group;

FIG. 8 is a cross-section view of a hinge comprised in the second hinge group;

FIG. 9 is a cross-section view of an outside hinge in the first hinge group as seen along **line 9-9** in **FIG. 5**;

FIG. 10 is a cross-section view of an outside hinge in the second hinge group, as seen along **line 10-10** in **FIG. 5**;

FIG. 11 is a bottom view of an outside hinge in the first hinge group;

FIG. 12 is a top view of an outside hinge in the second hinge group;

FIG. 13 is a cross-section view of a central hinge in the first hinge group, as seen along **line 13-13** in **FIG. 5**;

FIG. 14 is a cross-section view of a central hinge in the second hinge group, as seen along **line 14-14** in **FIG. 5**;

FIG. 15 is another side view of the tailgate ramp according to the preferred embodiment, in a deployed mode;

FIG. 16 is a cross-section view through the tailgate ramp along **line 16** in **FIG. 15**.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

While this invention is susceptible of embodiment in many different forms, there is shown in the drawings and will be described in details herein a specific embodiment, with the understanding that the present

disclosure is to be considered as an example of the principles of the invention and is not intended to limit the invention to the embodiment illustrated.

The foldable tailgate ramp of the preferred embodiment is illustrated in a fully deployed mode in the accompanying **FIGS. 1** and **2**. The tailgate ramp is mountable to a pickup truck **20** as a replacement of a common tailgate on the truck box. The ramp is usable for loading an all-terrain-vehicle, a motorcycle, a snowmobile, a lawn tractor or a vehicle or equipment of the like into the truck box. The foldable tailgate ramp of the preferred embodiment comprises a forward rectangular section **22**, an intermediate rectangular section **24** and a lower rectangular section **26**. The three sections are hinged to each other, and the forward section **22** is hinged to the pair of pivot bosses (not shown) normally used for mounting the common tailgate of the pickup truck **20**.

As can be seen in **FIG. 2**, the axis of the upper hinge group **30** between the forward and intermediate sections **22, 24**, is above the ramp, and the axis of the lower hinge group **32** between the intermediate section **24** and the lower section **26** is underneath the ramp. The foldable tailgate ramp of the preferred embodiment is thereby positional as to form an arcuate path along the length of the ramp as illustrated in **FIG. 2**. This feature will be explained later in greater details especially when making references to **FIGS. 7-16**.

The forward section **22** of the tailgate ramp is held in a horizontal or near a horizontal plane by means of a pair of tie straps **34** having each a hook **36** engaged into one of a pair of holed plates **38** affixed to the

forward section **22**. Each tie strap **34** is affixed to a pin **40** on the pickup truck box. The pins **40** are normally used for retaining linkages supporting a common tailgate.

Each holed plate **38**, which is better illustrated in **FIG. 5**, has a pair of holes therein. A forward hole **42** is used for receiving the hook **36** for holding the forward section **22** in a slight downward inclination as illustrated in **FIG. 2**. The rearward hole **44** is used for receiving the hook **36** for retaining the forward section **22** in a horizontal alignment as illustrated in **FIG. 3**.

The illustration in **FIG. 3** shows the tailgate ramp of the preferred embodiment in a partly folded mode. This configuration is particularly useful for increasing the length of a truck box for transporting equipment such as a snowmobile for example which normally has a longer span than the length of the truck box. In this configuration, the intermediate section **24** and the lower section **26** are held in a vertical alignment by means of a pair of link bars **50** connected to the forward section **22**. A first link bar **50** is connected to a first pin **52** on the lower section **26**, and a second link bar **50'** is connected to a second pin **52'** on the intermediate section **24** for retaining both the intermediate section **24** and the lower section **26** against one-another. The second link bar **50'** and the second pin **52'** are illustrated in **FIG. 5**.

Referring back to **FIG. 4**, the three sections of the tailgate ramp of the preferred embodiment are foldable in a vertical arrangement as illustrated therein when not used. When the tailgate ramp is stowed in this manner, the lower section **26** and the intermediate section **24** are preferably

held against one-another by a U-shaped bolt **54** engaged in a pair of sockets **56, 56'**, one on each section **24, 26**. The sockets **56, 56'** are illustrated in **FIG. 5**.

The three sections **22, 24** and **26** are framed with hollow structural steel (HSS) members **60**, and are covered with expanded metal grating **62**. The preferred size of HSS members **60** is 3/4 inch by 3/4 inch by 1/8 inch. The preferred size of expanded metal grating **62** is 3/4 inch by 13-gauge. This structure is advantageous for its light weight, its ease of manufacturing and for its low air resistance when stowed in the vertical position.

Referring now to **FIGS. 5** and **6**, the tailgate ramp of the preferred embodiment is lockable in the vertical stowed position by a pair of latch bolt assemblies **70** affixed to the forward section **22** of the ramp. Each latch bolt assembly **70** comprises a rectangular bolt **72** mounted in a rectangular sleeve **74**. The sleeve **74** is affixed transversely to a pair of framing members **60**. On the inside end of the bolt **72** relative to the forward section **22**, there is provided a L-shaped bracket **76** to which a cable **78** is attached. A pair of springs **80** are connected to the L-shaped bracket **76** and to the grating **62** of the section **22**, for pulling the latch bolt **72** outwardly relative to the forward section **22**. A further guide plate **82** is affixed to the L-shaped bracket **76** and defines with the latch bolt **72** a space for enclosing the latch pin **84** along the rear vertical edge of the truck box, which pin is normally used for latching a common tailgate. The cable **78** preferably extends across the forward section **22** between the two

latch bolt assemblies **70**. Thus, the operation of both latch bolt assemblies **70** is simultaneously effected by pulling on the cable **78** in a direction perpendicular to the plane of the forward section **22**.

The upper hinge group **30** comprises three equally-spaced-apart hinges; a pair of outside hinges **30'** and a central hinge **30"**. Similarly, the lower hinge group **32** comprises a pair of outside hinges **32'** and a central hinge **32"**. The structure of each section comprises a pair of longitudinal reinforcing members **90** extending longitudinally relative to the length of the ramp, within each section and in alignment with corresponding outside hinges **30', 32'**. A further pair of longitudinal reinforcing members **90'** is provided along a longitudinal central region of each section. The reinforcing members **90** and **90'** strengthen each section against bending stress in a direction along the length of the ramp when the ramp is being used. The reinforcing members **90, 90'** also strengthen the transverse members of each section against torsional stresses caused by the blocking of the hinges as will be explained later. The preferred type and dimensions of the reinforcing members **90, 90'** are HSS, 3/4 inch by 3/4 inch by 1/8 inch.

The forward framing member **94** of the forward section **22** is a round tubing having an outside diameter of about 1-5/8 inch. Both ends of the tubing **94** are notched for mounting on the pivot bosses (not shown) of a pickup truck box as is customary with a common tailgate.

Referring now to **FIGS. 7** to **16**, there is illustrated therein the arrangement of the hinge groups for causing the tailgate ramp of the preferred embodiment to uphold an upward curvature and thereby to

maintain higher moments of inertia. Each hinge in the upper hinge group **30** comprises a pair of flat bars **100** each being welded to a set of spaced-apart cylindrical sleeves **102**. The sleeves welded to one flat bar are interposed between the sleeves welded to the other flat bar in a manner which is common to hinges. Similarly, each hinge in the lower hinge group **32** is made of a pair of flat bars **100'** and cylindrical sleeves **102'**. The pin **108** in each hinge is preferably a round bar having a diameter of about 5/8 of an inch. The cylindrical sleeves preferably have an outside diameter of about 7/8 of an inch. The length of engagement of the cylindrical sleeve over the round bar **108** is preferably about 7 inches. Other preferred dimensions for the hinges are that the flat bars **100** on the upper hinges **30** have a thickness of 1/4 inch, a width of 1 inch and a length of about 10 inches. The flat bars **100'** on the lower hinges **32** preferably have a thickness of 3/8 of an inch, a width of 1 inch and a length of about 10 inches.

The hinges **30, 32** are affixed to each section using nominal 1/4 inch machine bolts **110**. Referring particularly to **FIGS. 9** and **11**, the bolts **110** used for retaining the upper hinge **30** to the forward and intermediate sections **22, 24** are staggered relative to one-another such that the bolt head **112** of one bolt does not come in contact with the bolt head **112'** of an opposite bolt when the ramp is unfolded.

The spacing 'A' between the flat bars **100** of the upper hinges **30, 30'** when these flat bars are parallel to one another is slightly more than the thickness of the bolt head **112**. The spacing 'A' is preferably sufficient for allowing a rotation of the intermediate section **24** relative to the forward

section **22** of between about 185^0 to about 195^0, when the bolt head **112** through one flat bar of an outside hinge **30'** abut against the opposing flat bar **100** of that hinge.

Referring now particularly to **FIGS. 10** and **12**, the bolts **114, 114'** retaining the lower hinge group **32** to the intermediate and lower sections **24, 26** are aligned with one-another such that the bolt heads **116, 116'** in opposed flat bars abut against each other when the tailgate ramp is fully deployed. The spacing **'B'** between the opposite flat bars **100'** of a lower hinge **32, 32'** when these flat bars **100'** are parallel to each other is slightly less than twice the thickness of a bolt head **112**. The spacing **'B'** is preferably sufficient for restricting the rotation of the lower section relative to the intermediate section to between about 168^0 and about 172^0, when the opposite bolt heads **116, 116'** on the outside hinges **32'** abut against one another.

According to the above limitations of the upper and lower hinge groups, the tailgate ramp of the preferred embodiment is preferably unfolded such that the forward section **22** has an inclination **'C'** as shown in **FIG. 15**, from an horizontal plane, of between about 8^0 to about 10^0. The intermediate section **24** preferably has an inclination **'D'** of about 8^0 to about 10^0 relative to the alignment of the forward section **22**. The lower section **26** preferably has an inclination **'E'** of between about 8^0 to about 10^0 relative to the alignment of the intermediate section **24**.

The arcuate path defined by inclination of each section of the tailgate ramp as illustrated in **FIG. 15** is particularly advantageous for loading equipment having a low undercarriage clearance, such as a large motorcycle or a tractor having a lawnmower mounted thereunder. The

arcuate path defined by each section is further advantageous for increasing the moment of inertia of the longitudinal cross-section of the ramp and consequently for stiffening the ramp transversely.

Referring back particularly to **FIGS. 13** and **14**, the central upper hinge **30"** and the central lower hinge **32"** have washers **120, 120'** under the bolt heads **112, 116** of the bolts retaining these hinges to the respective sections. The preferred thickness of each washer is about between 0.020 inch to about 0.080 inch. The purpose of these washers **120, 120'** under the bolt heads on the bolts of the central hinges **30", 32"** is to restrict the rotation of these hinges a few degrees less than the previously-stated rotational range of the outside hinges **30'** and **32'** respectively. When the tailgate ramp of the preferred embodiment is extended and loaded, the aforesaid blocking of the central hinges causes the central region of the tailgate ramp to remain higher than the side portions. In this respect and for reference purposes, a preferred median dimension of a transverse curvature of the ramp when the ramp is loaded, as shown as label **'F'** in **FIG. 16** is between about 1/8 of an inch to about ½ of an inch.

Therefore, when the ramp is loaded, the moment of inertia of a transverse cross-section of the ramp is substantially larger than the moment of inertia of a comparative flat cross-section having the same dimensions. The longitudinal strength of the ramp of the preferred embodiment is thereby increased accordingly.

Furthermore, the blocking of the central hinges **30", 32"** causes the transverse framing members **60'** between each section to twist under load. The blocking of the central hinges and the twisting of the transverse framing members **60'** also cause the central longitudinal reinforcing

members **90'** to flex when a load is carried on the ramp. Normally, without such blocking of the central hinges, these members would contribute very little strength to the supporting of a wide load such as an all-terrain-vehicle for example. In the normal case, the major part of the weight of the all-terrain-vehicle would be supported mainly by the longitudinal side members **60** and the longitudinal reinforcing members **90** along both sides of the ramp. The blocking of the central hinges as taught above contributes to pre-stressing the transverse members **60'** and the longitudinal central reinforcing members **90'** such that a load moving on the ramp is distributed across the entire ramp structure.

In order to further cause the ramp to initially flex transversely for increasing the moment of inertia of its transverse cross-section, the endmost member **130** of the lower ramp section **26** is preferably curved outwardly by a dimension of between about 1/4 of an inch to about one inch as indicated by label 'G' in **FIG. 5**. When the ramp is deployed, the lower section **26** is resting against a flat surface and a four-wheeled vehicle for example is moved over the lower section **26** of the ramp, the weight of the vehicle causes the side portions of the ramp to flex downwardly relative to the central longitudinal region, thus adding to the transverse curvature **'F'** and increasing the longitudinal strength of the ramp.

The tailgate ramp of the preferred embodiment is therefore substantially stronger than a comparable flat structure. The additional strength is obtained by an advantageous placement and configuration of the hinges, and the shape of the bottom member **130**. The additional strength is obtained without adding significant material or fabrication cost to the ramp as compared with the flat structures of the ramps of the prior art.

As to the manner of usage and operation of the tailgate ramp of the preferred embodiment, the same should be apparent from the above description, and accordingly any further discussion related to the manner of usage and operation would be considered redundant and is not provided.

While one embodiment of the present invention has been illustrated in the accompanying drawings and described hereinabove, it will be appreciated by those skilled in the art that various modifications, alternate constructions and equivalents may be employed without departing from the true spirit and scope of the invention. Therefore, the above description and the illustrations should not be construed as limiting the scope of the invention which is defined by the appended claims.

CLAIMS

I claim:

1. A foldable tailgate ramp for installation on a pickup truck, comprising:

a first, second and third rectangular sections contiguous with each other and defining a ramp path having an upper side, an under side, and longitudinal and transverse dimensions;

means for movably retaining and selectively steadying said first rectangular section to a pickup truck;

a first hinge group affixed to both said first and second rectangular sections for movably joining said first rectangular section to said second rectangular section;

a second hinge group affixed to both said second and third rectangular sections for movably joining said second rectangular section to said third rectangular section;

said first hinge group having a first axis of articulation on said upper side and extending along said transverse dimension, and means for allowing an articulation thereof over a first articulation range of more than 180^0;

said second hinge group having a second axis of articulation on said under side and extending in a parallel alignment with said first axis of articulation, and means for restricting an articulation thereof within a second articulation range of less than 180^0; and

said third rectangular section having a planar configuration and an endmost transverse structural member, and said endmost transverse structural member being arced with a central segment thereof away from said second hinge group within a plane of said planar configuration;

such that said first, second and third rectangular sections are workable to form an upwardly arcuate pathway for easily and stiffly supporting a load moving thereon.

2. The foldable tailgate ramp as claimed in **claim 1**, wherein said first articulation range is between 185 degrees and 195 degrees, and said second articulation range is between 168 degrees and 172 degrees.

3. The foldable tailgate ramp as claimed in **claim 1** , wherein said means for movably retaining and selectively steadying said first rectangular section to a pickup truck comprises means for aligning said first rectangular section along a reflex angle relative to a horizontal plane.

4. The foldable tailgate ramp as claimed in **claim 3**, wherein said reflex angle is between 188 degrees and 190 degrees.

5. The foldable tailgate ramp as claimed in **claim 3**, wherein said means for aligning said first rectangular section also comprises adjustment means for adjusting said reflex angle.

6. The foldable tailgate ramp as claimed in **claim 5**, wherein said adjustment means is a pair of holed plates and a pair of strap members connect-able to said holed plates and to a pickup truck.

7. The foldable tailgate ramp as claimed in **claim 1**, wherein said first rectangular section comprises link members connect-able to one of said second and third rectangular sections for retaining said second and third rectangular sections in a perpendicular alignment therewith.

8. The foldable tailgate ramp as claimed in **claim 1**, wherein said first hinge group comprises a pair of spaced-apart first outside hinges and a first central hinge disposed between said first outside hinges, and said second hinge group comprises a pair of spaced-apart second outside hinges and a second central hinge disposed between said second outside hinges, and said first and second central hinges being disposed at a common distance from said first and second outside hinges respectively.

9. The foldable tailgate ramp as claimed in **claim 8**, wherein each of said first, second and third rectangular sections comprises reinforcing members extending in coincidental alignment with positions of said first and second central and outside hinges.

10. The foldable tailgate ramp as claimed in **claim 1**, wherein said means for movably retaining and selectively steadying said first rectangular section to a pickup truck comprises a round tubing having means for pivotal connection thereof to a pickup truck.

11. A foldable tailgate ramp for installation on a pickup truck, comprising:

a first, second and third rectangular sections contiguous with each other and defining a ramp path having an upper side, an under side, and longitudinal and transverse dimensions;

means for movably retaining and selectively steadying said first rectangular section to a pickup truck;

a first hinge group affixed to both said first and second rectangular sections for movably joining said first rectangular section to said second rectangular section;

a second hinge group affixed to both said second and third rectangular sections for movably joining said second rectangular section to said third rectangular section;

said first hinge group having a first axis of articulation on said upper side and extending along said transverse dimension and a first articulation range of more than 180^0;

said first hinge group comprising a pair of spaced-apart first outside hinges and a first central hinge disposed between said first outside hinges;

said second hinge group having a second axis of articulation on said under side and extending in a parallel alignment with said first axis of articulation, and a second articulation range of less than 180^0;

said second hinge group comprising a pair of spaced-apart second outside hinges and a second central hinge disposed between said second outside hinges;

said first and second central hinges being disposed at a common distance from said first and second outside hinges respectively;

each of said first and second central hinges having a hinge blocking means for restricting an articulation thereof relative to said first and second outside hinges respectively;

such that said first, second and third rectangular sections are workable to form a longitudinally and transversely upwardly arced pathway for easily and stiffly supporting a load moving thereon.

12. The foldable tailgate ramp as claimed in **claim 11**, wherein each of said first, second and third rectangular sections comprises spaced-apart transverse framing members defining a respective lenght thereof, and said hinges are affixed to said transverse framing members by bolts.

13. The foldable tailgate ramp as claimed in **claim 12**, wherein said hinge blocking means comprises said bolts, and bolt heads abutting against each other.

14. The foldable tailgate ramp as claimed in **claim 13**, wherein said hinge blocking means also comprises washers on said bolts.

15. The foldable tailgate ramp as claimed in **claim 11**, wherein said third rectangular section has a planar configuration and an endmost transverse structural member, and said endmost transverse structural member is arced with a central segment thereof away from said second hinge group within a plane of said planar configuration.

16. The foldable tailgate ramp as claimed in **claim 15**, wherein a depth of a curvature of said endmost transverse structural member is between one quarter of an inch to one inch.

17. A foldable ramp for moving equipment thereon and comprising:
a plurality of juxtaposed rectangular sections defining a ramp path having longitudinal and transverse dimensions;
said plurality of rectangular sections comprising a first, second and third juxtaposed rectangular sections;
a first hinge group affixed to both said first and second rectangular sections for movably joining said first rectangular section to said second rectangular section,
a second hinge group affixed to both said second and third rectangular sections for movably joining said second rectangular section to said third rectangular section, and
said third rectangular section comprising an endmost transverse structural member spaced apart and arced with a central segment thereof away from said second hinge group,
such that said third rectangular section is transversely arcuately formative for increasing a moment of inertia thereof.

18. The foldable ramp as claimed in **claim 17**, wherein said second hinge group further comprises means for upwardly arcing at least one of said second and third rectangular sections along said transverse dimension.

19. The foldable ramp as claimed in **claim 18**, wherein said means for upwardly arcing at least one of said second and third rectangular sections comprises means for arcing said rectangular section over a height of between 1/8 inch to ½ inch.

20. The foldable tailgate ramp as claimed in **claim 17**, wherein said first rectangular section comprises link members connect-able to one of said second and third rectangular sections for retaining said second and third rectangular sections in a perpendicular alignment therewith.

Mario D. Theriault, P.Eng.
Patent Agent for Applicant

CA 02219754 2003-04-11

TITLE: FOLDABLE TAILGATE RAMP FOR PICKUP TRUCKS

ABSTRACT OF THE DISCLOSURE

A foldable ramp having a first, second and third rectangular sections contiguous with each other and defining a ramp path having longitudinal and transverse axes. A first hinge group is affixed to both the first and second sections and a second hinge group is affixed to both the second and third sections. The first hinge group has a first axis of rotation on the upper side of the ramp path and extending across the longitudinal axis, and a first rotational range of slightly more than 180^0. The second hinge group has a second axis of rotation on the under side of the ramp path and extending in a parallel alignment with the first axis of rotation, and a second rotational range of slightly less than 180^0. The first and second hinge groups each have a central hinge and outside hinges, and stoppers on the central hinges to limit the rotation of the central hinges a few degrees less that the rotational range of the outside hinges. This configuration causes the ramp to arc longitudinally and transversely upwardly when deployed for increasing the moments of inertia of the ramp.

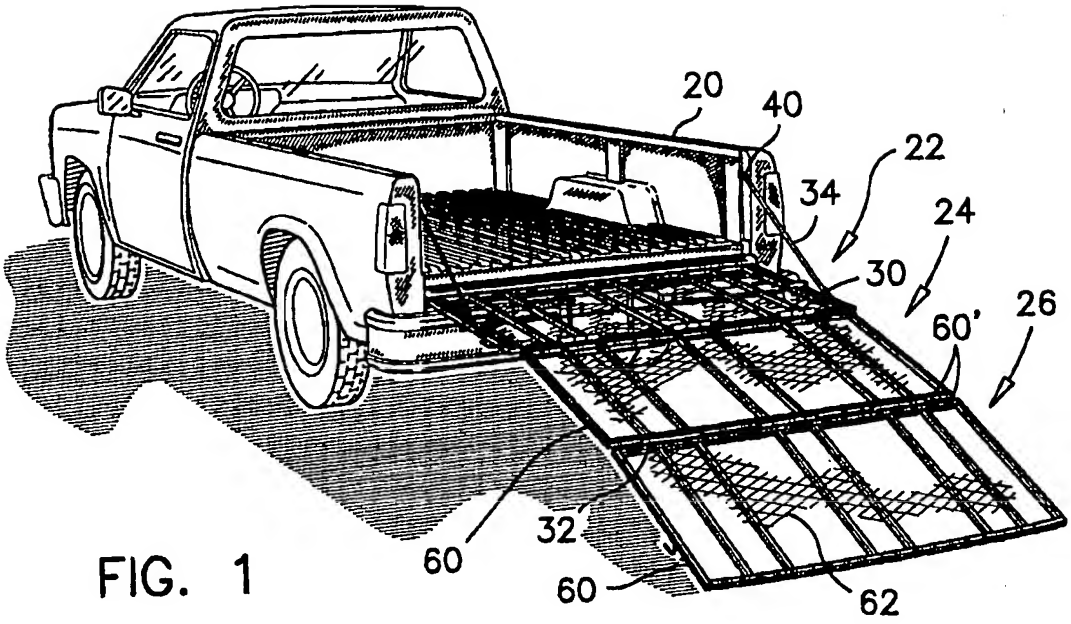


FIG. 1

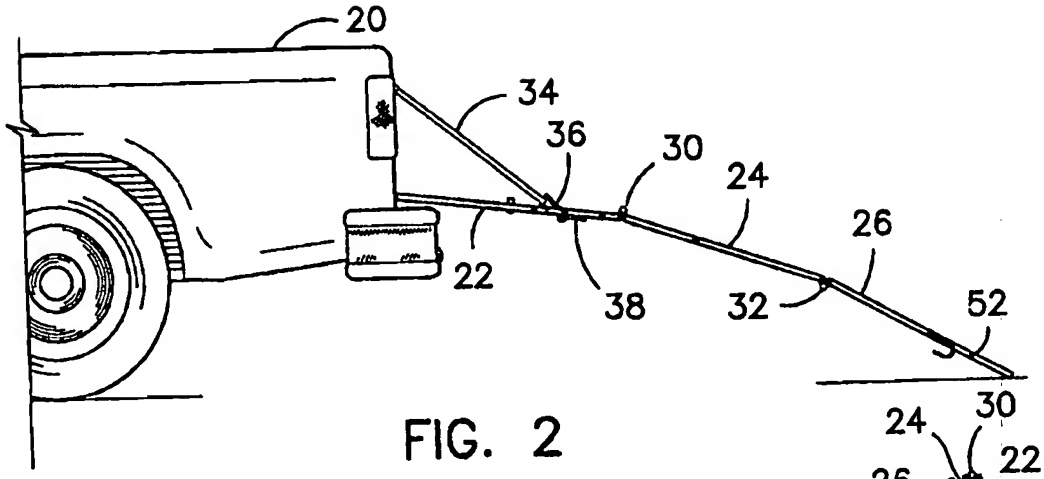


FIG. 2

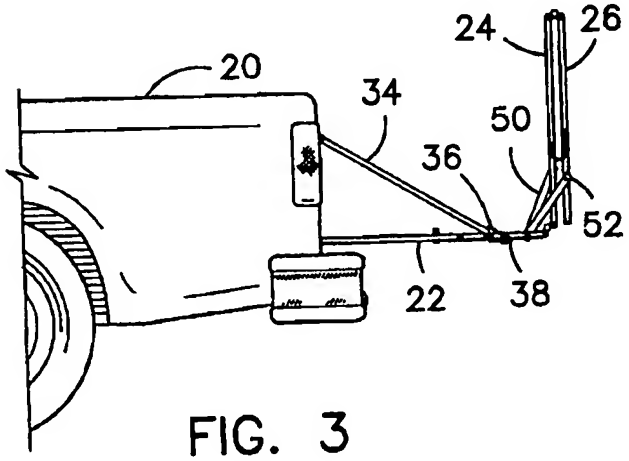


FIG. 3

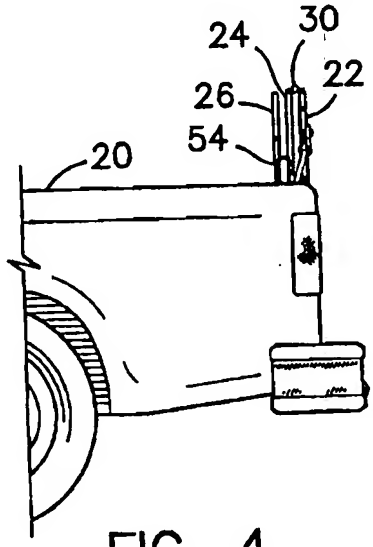


FIG. 4

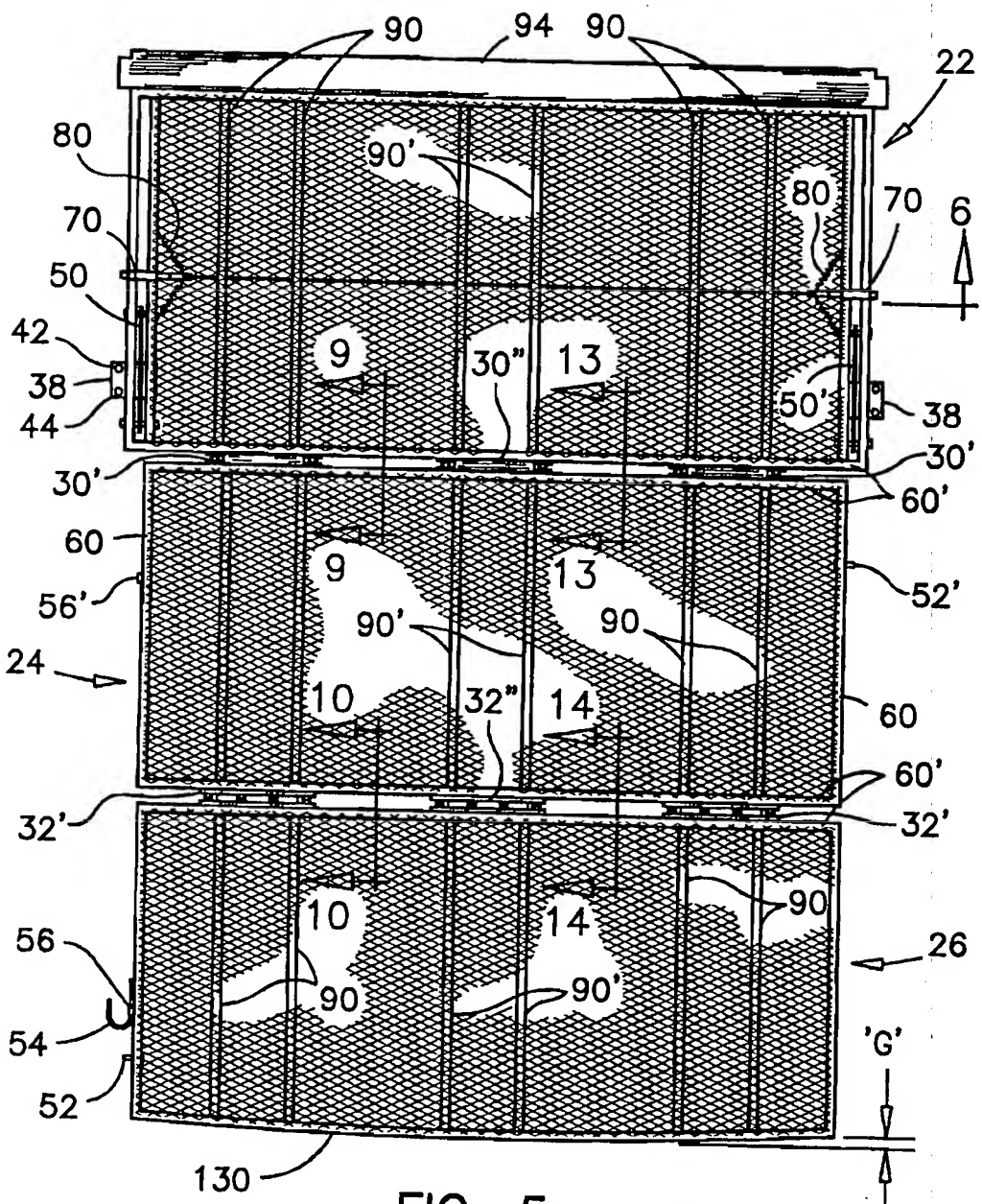
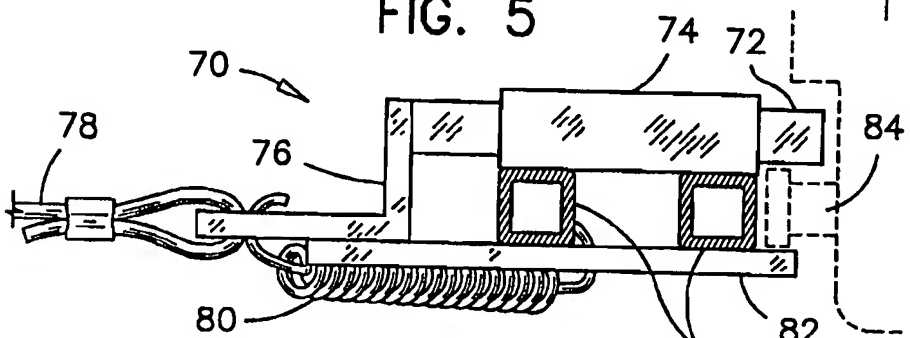

90
94
90
22
80
90'
80
70
6
70
50
42
9
30"
13
50'
38
38
44
30'
30'
60'
60
9
13
52'
56'
90'
90
24
10
32"
14
60
60'
32'
32'
10
14
90
56
26
90
90'
54
'G'
52
130

FIG. 5


70
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84
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82
60

FIG. 6

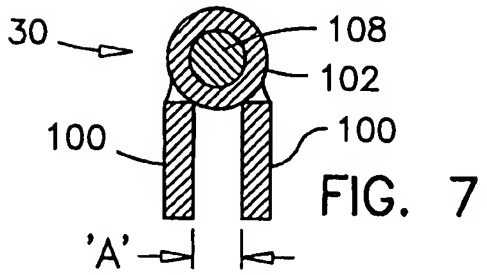


FIG. 7

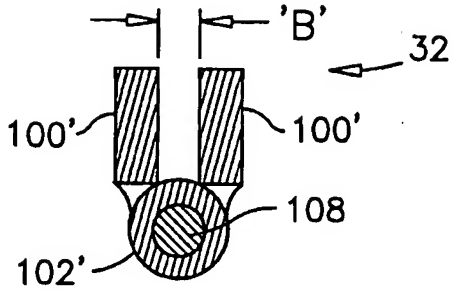


FIG. 8

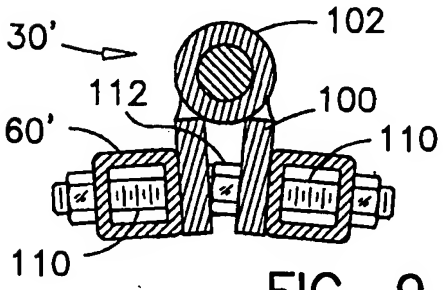


FIG. 9

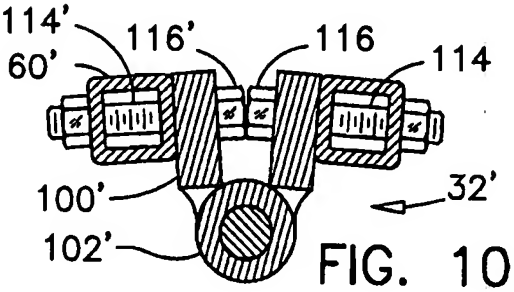


FIG. 10

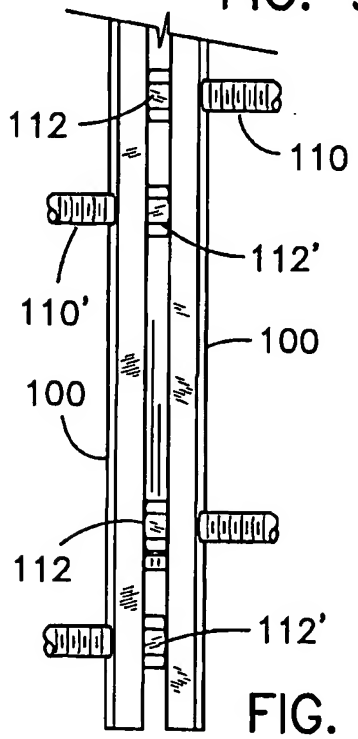


FIG. 11

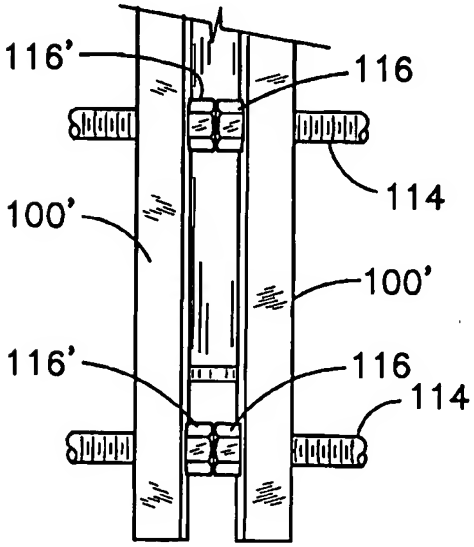


FIG. 12

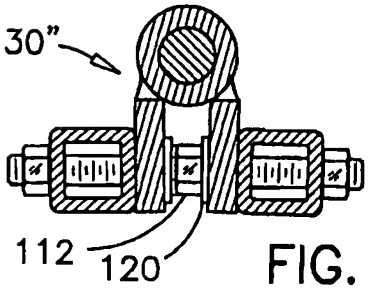


FIG. 13

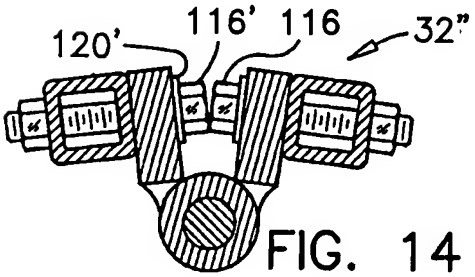


FIG. 14

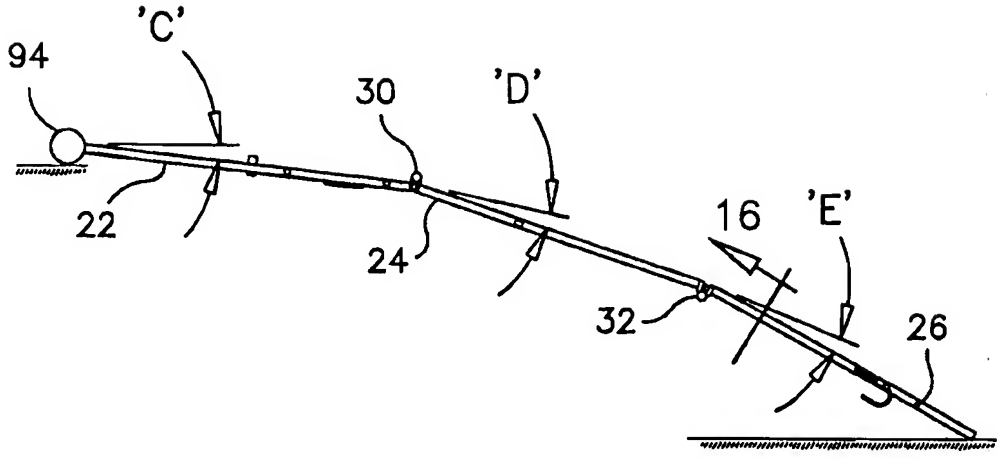


FIG. 15

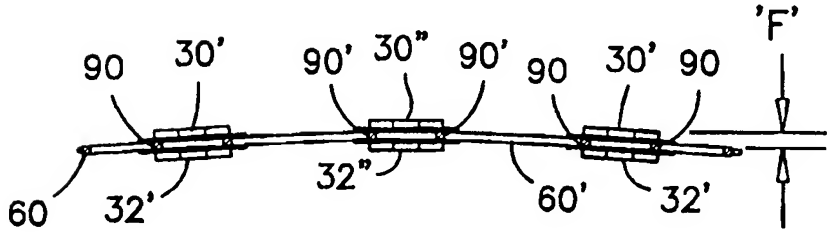
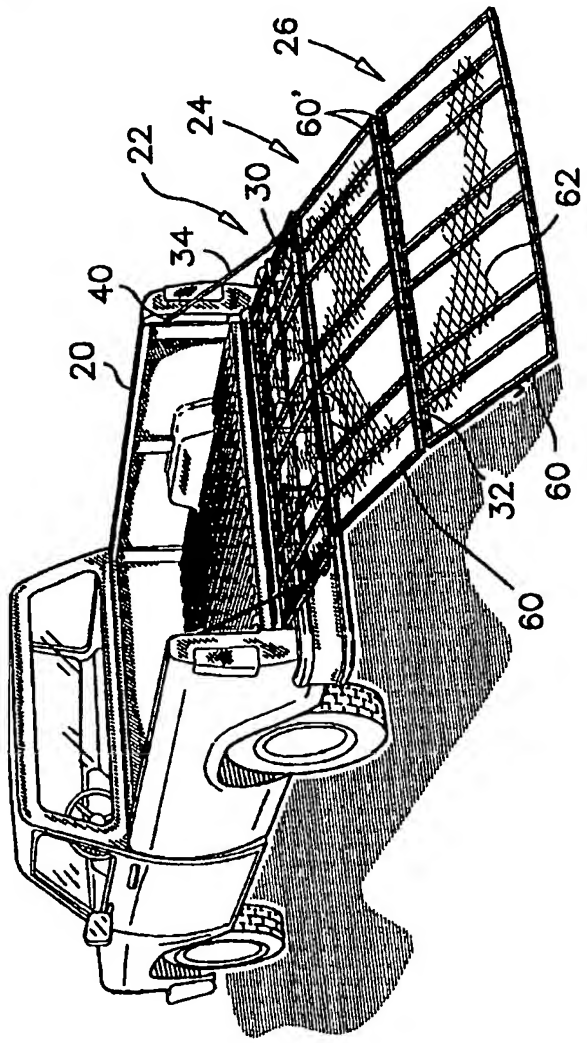


FIG. 16


26
60'
24
22
30
34
40
20
62
60
32
60

Consommation et Corporations Canada
Consumer and Corporate Affairs Canada

Bureau des brevets
Patent Office

Ottawa, Canada
K1A 0C9

(21) (A1) 2,028,014
(22) 1990/10/19
(43) 1992/04/20
(52) 14-4
C.R. CL. 296-68

5,043,3/51

(51) INTL.CL.[5] E01D-1/00

(19)(CA) **APPLICATION FOR CANADIAN PATENT** (12)

(54) Ramp King with Folding Tailgate

(72) Haskell, Robert W. - Canada ;

(73) C.H.M. Manufacturing Limited - Canada ;

(57) 8 Claims

TECHNICAL FIELD

The present invention relates to a vehicle loading ramp and more particularly, to a loading ramp adapted to serve as a tailgate in the folded position.

BACKGROUND OF THE INVENTION

The loading and unloading of bulky, heavy objects from a vehicle such as a truck has presented a problem for some time. For example, the weight of the object may be such that it renders manual loading almost impossible. Alternative solutions have been developed to address this problem. One such solution involves the use of ramps. These however are bulky, rendering their handling at the loading site difficult. Further, such ramps take up considerable storage space when not in use. Recently vehicle tailgates that are capable of also being used as loading ramps have become available.

One example of such a convertible tailgate is disclosed in Canadian Patent No. 1,238,156 of Hanson issued June 21, 1988. That patent discloses a vehicle tailgate ramp including two separate foldable flow-through ramps. Each ramp after use, is removed and folded for storage in a movable tailgate frame at the rear of a vehicle. This device still requires a lot of manipulation before loading and/or unloading can be achieved. Canadian Patent No. 847,002 issued July 21, 1970 to Hall illustrates a flow-through vehicle loading ramp which may be

attached to the tailgate of a vehicle. United States Patent No. 4,761,847 issued August 9, 1988 to Savage relates to a portable folding ramp and is of general background interest.

It is an object of the present invention to provide an improved vehicle tailgate ramp assembly wherein the vehicle tailgate functions as a ramp when unfolded.

SUMMARY OF THE INVENTION

In accordance with the present invention a foldable vehicle tailgate ramp assembly is provided. The ramp comprises a plurality of rectangular ramp panels, each having top and bottom surfaces and longitudinal and lateral sides. The first of these ramp panels is pivotably mountable to a vehicle to form a tailgate. The tailgate is adapted when in position on the vehicle to swing about an axis adjacent a lower longitudinal side of the first panel between a closed, vertical first position to a second open, ramp position. Means are provided to pivotably connect the ramp panels along adjacent longitudinal aides so as to unfold into an operable ramp position with the panels held in coplanar relationship when the first of the ramp panels is in open position, and fold into a storage position with the first of the ramp panels in closed position. Means are provided to releasably secure the ramp panels in first position.

BRIEF DESCRIPTION OF THE DRAWINGS

These and other objects and advantages of the invention will become apparent upon reading the following detailed description and upon referring to the drawings in which:

FIGURE 1 is a perspective view of the folded tailgate ramp assembly in accordance with the present invention on the rear of a pick-up truck;

FIGURE 2 is a perspective view of the tailgate ramp assembly of FIGURE 1, unfolded as a ramp;

FIGURE 3 is a side view of the ramp of FIGURE 2. The folding of the ramp is shown in phantom lines;

FIGURE 4 is a side view of the tailgate ramp assembly of FIGURE 1;

FIGURE 5 is a rear view of the vehicle tailgate ramp assembly of FIGURES 1 and 4 in a folded position;

FIGURE 6 is a broken exploded view of the hinge assembly joining panels making up the tailgate ramp assembly of the present invention;

FIGURE 7 is a broken exploded view of a latching device for the panels of the present invention; and

FIGURE 8 is a side view of the latching device of FIGURE 7.

While the invention will be described in conjunction with an example embodiment it will be understood that it is not intended to limit the invention to such embodiment. On the contrary, it is intended to cover all alternatives, modifications and equivalents

as may be included within the spirit and scope of the invention as defined by the appended claims.

DETAILED DESCRIPTION OF THE INVENTION

In the drawings, similar features have been given similar reference numerals.

FIGURES 1 and 2 illustrate respectively a vehicle tailgate ramp assembly 2 of the preferred embodiment of the present invention in folded and unfolded positions mounted on the rear of a pick-up truck 3.

As shown in FIGURE 2 the vehicle tailgate ramp assembly 2 of the preferred embodiment comprises a plurality of panels 4, each panel pivotably secured to its adjacent panel or panels, each of the panels having a top surface 6, a bottom surface 8, longitudinal sides 10 and lateral sides 12.

Referring to FIGURES 1 and 2, it can be seen that an innermost panel 13 is of such width that when folded it functions as a tailgate to completely enclose the rear of pick-up truck 3. The other panels 4 are generally of smaller width. The panels 4 are connected to each other by a hinge assembly 14, to be described in more detail hereinafter, and are maintained in a folded position, when not used as a ramp, by a pair of spring-loaded latches 16 and a spider latch 18. A pair of conventional latches 19 at the top of the lateral sides of panel 13 releasably engage corresponding portions of the rear of pick-up truck 3 to enclose it like a conventional tailgate and secure it in vertical position.

With reference to FIGURE 3 the longitudinal side 10 of each panel 4 is pivotally joined to a corresponding side 10 of an adjacent panel 4 by hinge means 14, details of which will be set out subsequently. Panel 13 is pivotably mounted at its bottom to vehicle 3 by hinge 22 to swing about an axis through that hinge from a first, closed position as shown in phantom to a second opened position as shown in full line. As shown in FIGURES 2 and 3 the top surfaces 6 of the panels 4 are substantially coplanar with respect to one another when the tailgate ramp assembly is completely unfolded. As shown in FIGURE 6, the construction of the hinge assembly 14 is such that when the panels 4 are unfolded to the extent that their top surfaces are coplanar, a stop block 24 limits any further relative pivotal movement of the panels in that same direction. When folded, the top surfaces 6 of consecutive panels 4 opposedly face one another.

As can be seen in FIGURE 2 each of the panels is, for example, reinforced by a plurality of longitudinal bracing members 26 affixed to expanded metal sheeting 28. To further reinforce and support the vehicle tailgate ramp assembly when in the unfolded position, a telescopic leg 30 is pivotally connected to longitudinal sides 12 of a panel 4 as illustrated. The precise location of the leg 30 will depend upon the length of the tailgate ramp assembly. The height of the leg 30 can be telescopically longitudinally adjusted so as to adapt to different height requirements. To give further strength to the tailgate ramp assembly in the unfolded position the first panel 13 when unfolded may or may not rest on bumper 32 of the vehicle 3.

FIGURES 4 and 5 illustrate the tailgate ramp assembly in folded position with the latches 16 and 18 retaining the ramp panels 4 in such position.

As can be seen in FIGURE 6, to enable the panels 4 to pivot with respect to each other, aligned hinge sleeves 34 are secured to different ones of the adjacent longitudinal sides 10 of adjacent panels 4 so as to receive hinge rod 36. Stop block 24 is welded to longitudinal side 10 of one ramp panel 4 while a surface bearing bar 38 is welded in confronting fashion to the corresponding longitudinal side 10 of adjacent ramp panel 4. In operation as the panels are unfolded, hinge sleeves 34 of each adjacent pair of panels for rotate around hinge rod 36 until stop block 24 rests against surface bearing bar 38. Stop block 24 is of such a construction that, when panels 4 are completely unfolded and coplanar, it prevents any further rotation of hinge rod 36 while abutting against surface bearing bar 38.

Spring-loaded latches 16, secured as illustrated to opposite lateral sides 12 of the panel 4 adjacent panel 13, are used to releasably secure the ramp panels 4 to the first panel 13 (FIGURES 7 and 8). Each latch 16 comprises a casing 40 encasing a spring 42 biased against a square spring stop 44 fixed within casing 40. A post 46, with flange cap 47, passes through the aligned holes 48 of casing 40 and is welded to one of the lateral sides 12 of lowermost panel 4 so that casing 40 can rotate on post 46. In operation a finger 50 activated by handle 51, acting against the bias of spring 42 secured thereto, is pulled until the finger grips lateral sides 12 of the other folded ramp panels 4 and

retains ramp panels 4 in folded position.

Thus it is apparent that there has been provided in accordance with the invention a vehicle tailgate ramp assembly that fully satisfies the objects, aims and advantages set forth above. While the invention has been described in conjunction with a specific embodiment thereof, it is evident that many alternatives, modifications and variations will be apparent to those skilled in the art in light of the foregoing description. Accordingly, it is intended to embrace all such alternatives, modifications and variations as fall within the spirit and broad scope of the invention.

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. A foldable vehicle tailgate ramp assembly comprising:

(a) a plurality of rectangular ramp panels each having top and bottom surfaces and longitudinal and lateral sides; wherein a first of these ramp panels is pivotably mountable to a vehicle to form a tailgate adapted when in position on the vehicle to swing about an axis adjacent a lower longitudinal side of the first panel between a closed, vertical first position to a second, open ramp position;

(b) means to pivotably connect the ramp panels along adjacent longitudinal aides so as to unfold into an operable ramp position with the panels held in coplanar relationship when the first of the ramp panels is in open position, and fold into a storage position with the first of the ramp panels in closed position; and

(c) means to releasably secure the ramp panels in first position.

2. The foldable vehicle tailgate ramp assembly of claim 1 wherein the corresponding longitudinal sides of adjacent panels are pivotably connected by means of a hinge assemblies each having

means to limit the relative pivoting of corresponding panels in one direction to a position wherein the top surfaces are substantially coplanar.

3. The foldable vehicle tailgate ramp assembly of claim 2 wherein the hinge assembly comprises:

(a) a pair of spaced, aligned hinge sleeves respectively secured to different ones of corresponding longitudinal sides of adjacent panels and a rod rotatably secured within; and

(b) a stop block secured to one of these longitudinal sides so as to abut against a surface bearing bar affixed to the other longitudinal side to retain the panels in a coplanar relationship when in ramp position.

4. The foldable vehicle tailgate ramp assembly of claim 1 wherein latches are secured to the panels to releasably secure the panels in closed position.

5. The foldable vehicle tailgate ramp assembly of claim 4 wherein the latches comprise a pair of conventional latches secured to lateral sides of first panel to releasably secure the first of the ramp panels to the vehicle in vertical orientation when in closed position and a pair of spring-loaded latches secured to the lateral sides of another of the panels to releasably hold the ramp panels in storage position.

6. The foldable vehicle tailgate ramp assembly of claim 5 wherein each of the spring-loaded latches comprise a panel-gripping finger, moveable against the bias of the spring to releasably grip lateral sides of the other ramp panels to hold them in folded positions.

7. The foldable vehicle tailgate ramp assembly of claim 1 wherein a pair of telescopically adjustable vertical support members are affixed to the lateral sides of a central ramp panel to supportably engage a ground surface when the panels are into ramp position.

8. The foldable vehicle tailgate ramp assembly comprising:

(a) a plurality of rectangular ramp panels each having top and bottom surfaces and longitudinal and lateral sides; a first of said panels being pivotably mounted to the vehicle to form a tailgate and the others of said panels being pivotably connected to each other along adjacent longitudinal sides;

(b) a pair of hinge assemblies pivotably connecting the panels at adjacent longitudinal sides so that in operation the panels will unfold and fold between a first folded position wherein the top surfaces of consecutive panels opposedly face one another and a second open, ramp position wherein the top surfaces form a continuous planar ramp surface;

(c) a pair of adjustable legs hingedly connected to longitudinal sides of a central panel to provide support to the panels when in ramp position; and

(d) latching means to releasably lock respectively the first panel to the vehicle as a tailgate and the other panels to the first panel when the panels are in folded position.

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Patent Agents for the Applicant

ABSTRACT OF THE DISCLOSURE

A vehicle tailgate ramp assembly comprising a plurality of rectangular panels pivotally connected to each other in such a way that the assembly can be used as loading ramp when the panels are unfolded. A panel acts as a completely closed tailgate when the panels are folded onto one another.

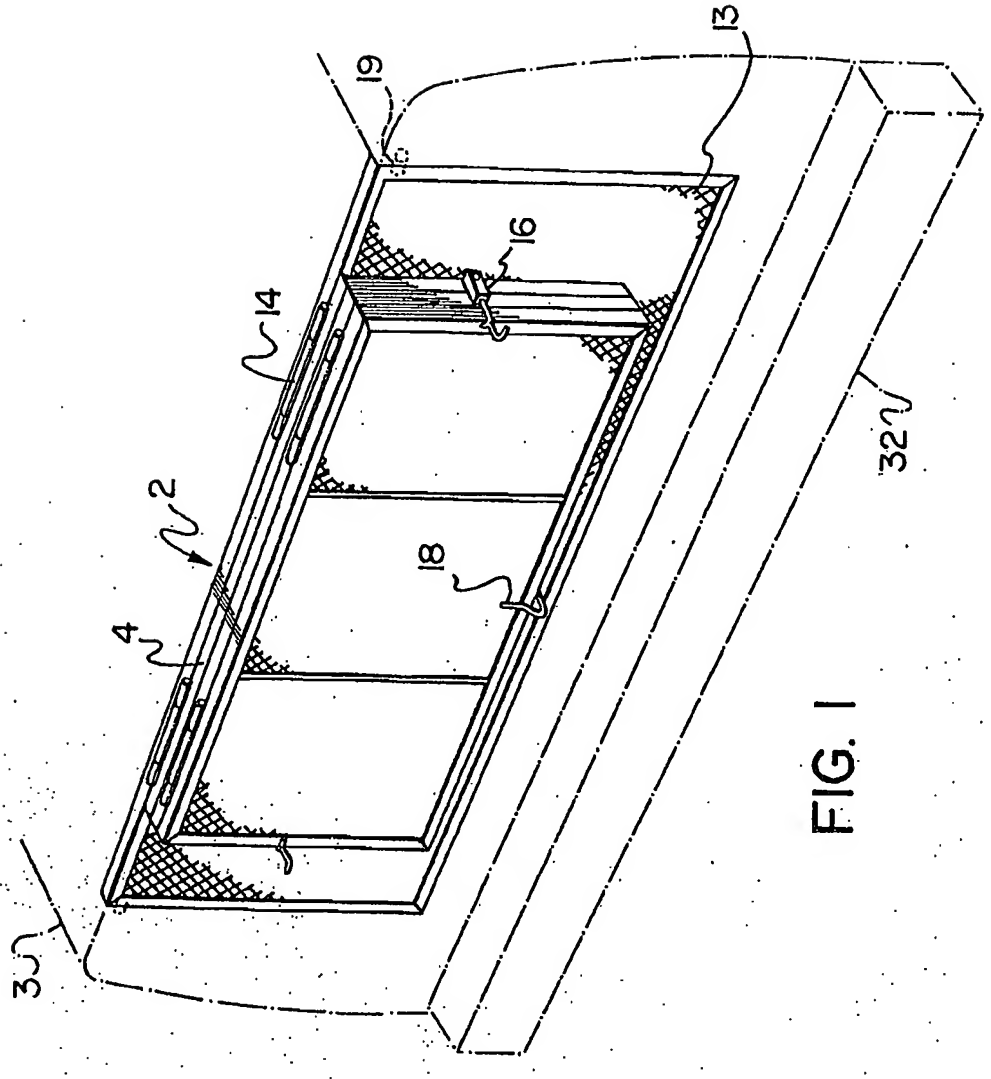

FIG. 1

Inventor: Robert W. Haskell
Patent Agents: Burke-Robertson

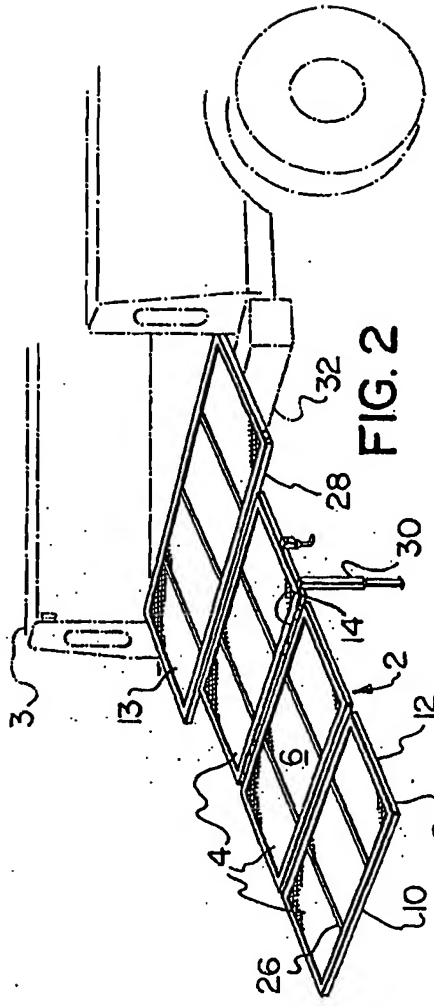

FIG. 2

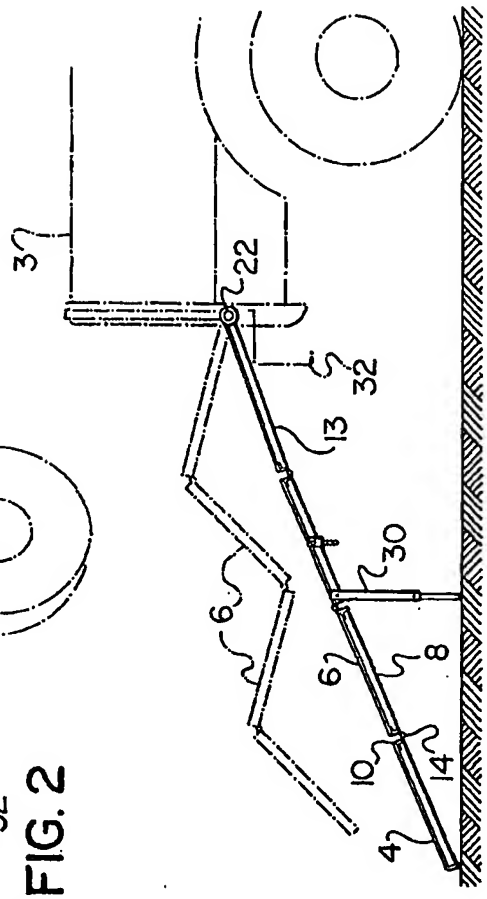

FIG. 3

Inventor: Robert W. Haskell

Patent Agents: Burke-Robertson

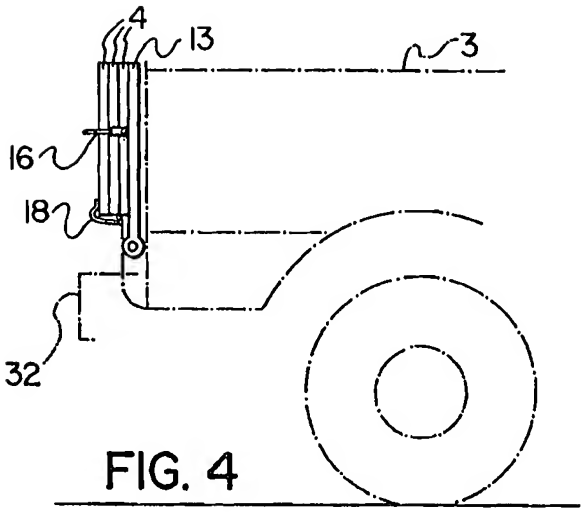

FIG. 4

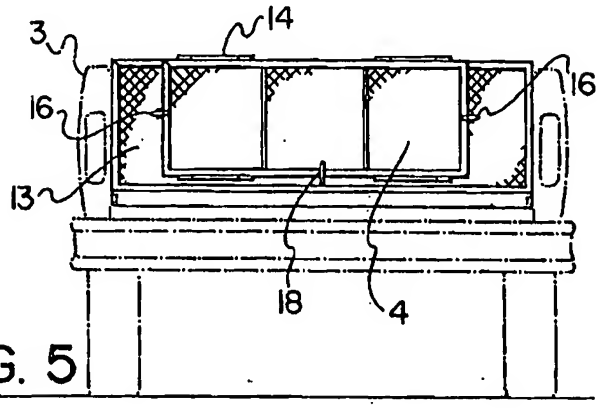

FIG. 5

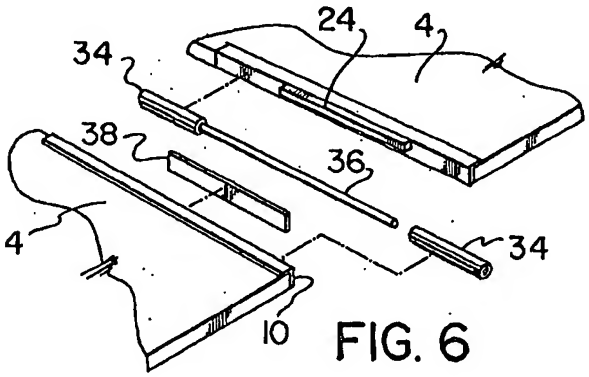

FIG. 6

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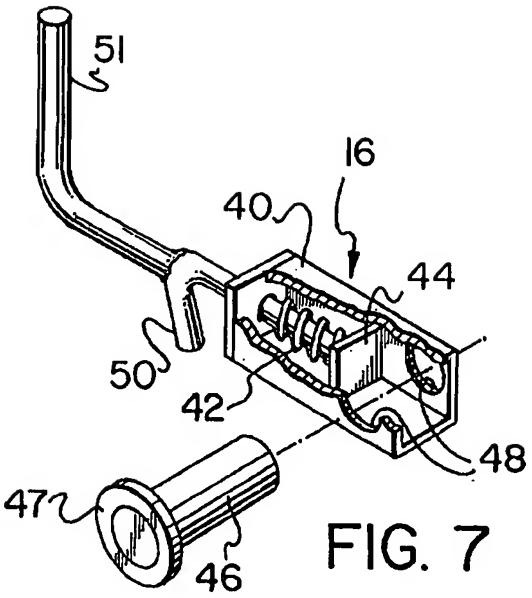

FIG. 7

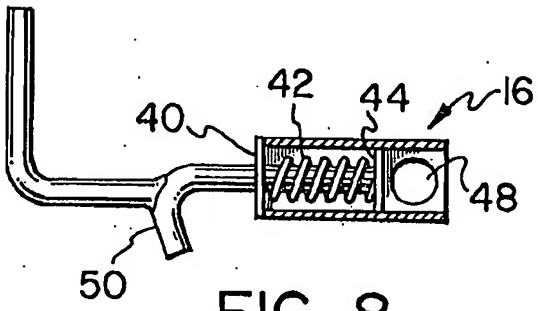

FIG. 8

Inventor: Robert W. Haskell

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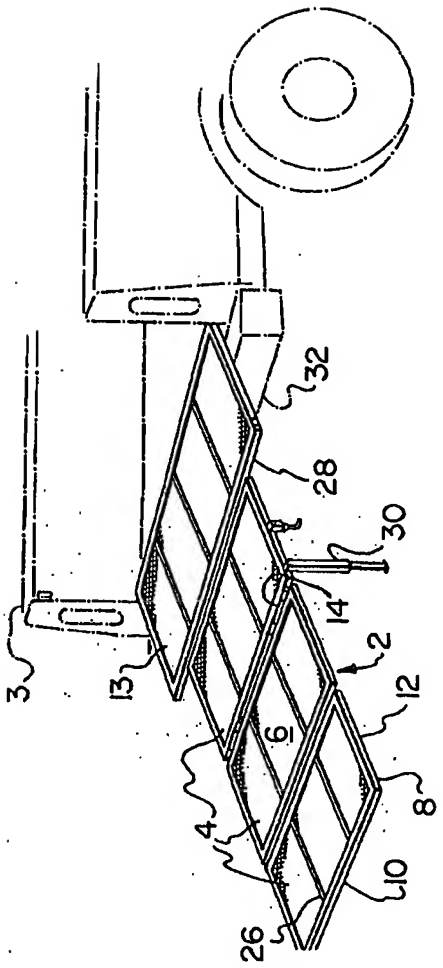
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(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	10/781,483
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First Named Inventor	Huggins, George
Art Unit	3652
Examiner Name	Charles Fox
Attorney Docket Number	HUG107

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